

APPENDIX K. Compatibility Determinations

This appendix contains Compatibility Determinations for the following uses of Steigerwald Lake National Wildlife Refuge, Franz Lake National Wildlife Refuge, and Pierce National Wildlife Refuge, hereafter, collectively called the Gorge Refuges:

- environmental education and interpretation and wildlife observation and photography
- horseback riding, jogging, bicycling, and dog-walking on the Columbia River Dike Trail
- research and monitoring projects
- grazing and haying cooperative land management program
- transportation of sewage treatment plant biosolids over Refuge dike

Refuge Location, Establishing and Acquisition Authorities, and Purposes

Steigerwald Lake National Wildlife Refuge

Location: Clark County, adjacent to Washougal, Washington

Date Established: 1987

Establishing and Acquisition Authorities: Migratory Bird Conservation Act of 1929 (16 U.S.C. 715d(2)); Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a-742j); Public Law 98-396, Sec. 303a; Emergency Wetlands Resource Act of 1986 (16 U.S.C. 3901(b)); Land and Water Conservation Fund Act of 1965 (16 U.S.C. 460L 4-11; 78 Stat. 897); Pacific Northwest Power Planning and Conservation Act of 1980 (16 U.S.C. 12)

Refuge Purposes:

- “....for use as an inviolate sanctuary, or for any other management purpose, for migratory birds” (Migratory Bird Conservation Act of 1929).
- “... to provide prime foraging and wintering habitat for a variety of waterfowl.” (Migratory Bird Conservation Commission Memorandum, 2001, Number 2, Steigerwald Lake National Wildlife Refuge, Clark County, Washington.)
- “...for the fish and wildlife mitigation purposes associated with this [Bonneville Lock and Dam, Second Powerhouse,] *project*.” (Public Law 98-396; Sec. 303a)
- “... for the development, advancement, management, conservation, and protection of fish and wildlife resourcesfor the benefit of the United States Fish and Wildlife Service, in performing its activities and services.” (Fish and Wildlife Act of 1956; 16 U.S.C. 742f(a)(4))
- “...the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions.” (Emergency Wetlands Resources Act of 1986; 16 U.S.C. 3901(b))
- “...to protect, mitigate and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries, particularly anadromous fish ...from the management and operation of the Federal Columbia River Power System and other power generating facilities on the Columbia River and its tributaries.” (Pacific Northwest Electric Power Planning and Conservation Act of 1980).

Franz Lake National Wildlife Refuge

Location: Skamania County, near Skamania, Washington

Date Established: 1990

Establishing and Acquisition Authorities: Fish and Wildlife Act of 1956, as amended (16 U.S.C. § 742a-742j; 70 Stat.1119)

Refuge Purposes:

“... to preserve biodiversity along the Columbia River by protecting diverse and now rare Columbia River floodplain wetland and riparian habitat and forested watershed buffer.” (U.S. Fish and Wildlife Service, Environmental Assessment, proposed Franz Lake National Wildlife Refuge, Skamania County, Washington.)

Pierce National Wildlife Refuge

Location: Skamania County, Washougal, Near North Bonneville, Washington

Date Established: 1990

Establishing and Acquisition Authorities: Migratory Bird Conservation Act of 1929 (16 U.S.C. § 715 et seq.; 45 Stat. 1222); Fish and Wildlife Act of 1956, as amended (16 U.S.C. § 742a-742j; 70 Stat.1119)

Refuge Purposes:

- “....for use as an inviolate sanctuary, or for any other management purpose, for migratory birds” (Migratory Bird Conservation Act of 1929).
- “... for wildlife refuge, recreation or park purposes.” (Warranty Deed)
- “... to help meet total Service objectives in the Columbia River Gorge for protection and enhancement of significant wildlife resources.” (U.S. Fish and Wildlife Service Land Protection Plan for Pierce National Wildlife Refuge, Skamania County, Washington.)

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System is "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans" (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Compatibility Determination

Use: Environmental Education, Interpretation, Wildlife Observation, and Photography

Refuge Names: Steigerwald Lake, Franz Lake and Pierce National Wildlife Refuges

Description of Use(s):

This compatibility determination examines existing and proposed nonconsumptive wildlife-dependent recreational uses on Steigerwald Lake, Franz Lake, and Pierce National Wildlife Refuges (Gorge Refuges). These Refuge uses are combined into one compatibility determination due to their non-consumptive nature. Additionally, existing and proposed elements of the uses may support one another.

Steigerwald Lake National Wildlife Refuge

Existing Uses

A 5.5-mile flood control levee separates the historic Steigerwald Lake from the Columbia River. Constructed in 1965-1966 by the U.S. Army Corps of Engineers, the dike marks the south boundary of Steigerwald Lake National Wildlife Refuge (Refuge). In addition to the Refuge, the dike protects agricultural, residential, commercial, and industrial properties. The dike rises approximately 15 to 20 feet above the ground elevation. An administrative road, measuring 12 to 15 feet wide, extends along the full length of the dike on its top surface. A 3.6-mile section of this gravel surface road (between Steamboat Landing and the east boundary of the Refuge) is commonly referred to as the Columbia River Dike Trail (Dike Trail). Approximately 1.1 miles of the Dike Trail are on property owned by the Port of Camas/Washougal (Port) and 2.5 miles of the trail are on the Refuge (See Figure 3-4 in the CCP). The remaining 1.9 miles of dike road (not currently part of the Dike Trail) are on private land within the Refuge's approved acquisition boundary. A locked gate on the dike prevents public access to this section of the dike road.

The section of dike constructed on the Refuge is within a permanent easement and right-of-way owned by the Port. The grant of easement provides the right to "reconstruct, maintain, repair, operate and patrol a flood protection project consisting of a dike or levee and its appurtenances." Vehicle access to the dike is currently controlled by the Port. While the Port is legally responsible for maintaining the dike, including the gravel road, the U.S. Fish and Wildlife Service (Service) retains authority to control public access to and use of the portion of the dike crossing its property. Although the Refuge is closed to the public, the Service neither enforces the public closure on the Dike Trail nor discourages the public from using the trail.

Environmental education at Steigerwald Lake Refuge has been largely limited to periodic staff or volunteer guided tours along the Dike Trail. Annually, one or two tours consisting of less than 50 participants per tour have occurred along the Dike Trail. These tours have been requested by non-government organizations and have concentrated on wildlife observation, Refuge management, and natural resources. Presently, the Service has not developed interpretive signs, panels, or kiosks along the Dike Trail.

The Dike Trail is used by the public for a variety of recreational activities including wildlife observation and photography, as well as non-wildlife dependent uses such as horseback riding, bicycling, dog-walking, and jogging. Dugger (2003) recorded the number of people and type of activity he observed while walking the Dike Trail between March 20, 2002, and March 30, 2003. Because these data were not collected using a systematic study design or protocol, they are not suitable for statistical analysis. Rather, results provide a “snap-shot” of common trail uses occurring during certain times of the day and throughout the year. Surveys were conducted during daylight hours on 76 separate days, with most surveys occurring in the afternoon (34 percent) or evening (59 percent). Surveys occurred throughout the week, with 46 percent of surveys occurring on weekends. On average, 9.7 people (n = 705 surveys; range one to 30) were observed using the Dike Trail during the two to three hour survey period; including on and off Refuge trail segments. Recreationists were observed at a density of 2.0 to 6.0 trail users per mile of trail with 66 percent hiking. Information was not gathered to indicate uses occurring simultaneously with hiking such as photography and wildlife observation. However, the popularity of the Dike Trail which offers views of the Refuge, its resources, and panoramas of the Columbia River would suggest that hikers are concurrently using the trail for wildlife observation and appreciation of nature.

The Interagency Committee for Outdoor Recreation (IAC) has projected statewide recreational demands, the public desires outdoor recreation settings which are safe from accidents and crime and which are natural or natural appearing (IAC 1995). The IAC (1995; 2003) projects that hiking will increase 20 percent over the next 20 years ; demand for nature activities will increase by 37 percent during the same period. Anticipating increasing demand for outdoor recreation, and in preparation for the Lewis and Clark bicentennial celebration, the Port has developed a master plan for a regional park, named Captain William Clark Park at Cottonwood Beach, adjacent to the southwest boundary of Steigerwald Lake Refuge and bordering the Dike Trail. By 2006, it is anticipated that developments will include camping sites, parking, horseshoe pits, volleyball courts, picnic areas, restrooms, and historical interpretation displays. Expansion of the day use area at Steamboat Landing and construction of a new fishing and boat dock are also proposed. It is assumed that improved recreational facilities and increased public use adjacent to the Dike Trail will result in increased use of the Dike Trail.

Proposed Uses

In the draft Comprehensive Conservation Plan and Environmental Assessment (CCP/EA) for the Gorge Refuges, the Service's preferred alternative would officially open the Dike Trail at Steigerwald Lake Refuge to environmental education and interpretation and wildlife observation and photography within two years of plan approval. Through partnerships, Refuge information and interpretation would be developed and incorporated at a kiosk to be constructed on the Dike Trail at Captain William Clark Park. Development of these educational and interpretive messages would support a wildlife-dependent experience on Refuge portions of the Dike Trail. The Dike Trail would continue to be a main route for staff and volunteer guided tours for interested groups and partners. Guided tours are not anticipated to exceed five per year.

Environmental education and interpretation and wildlife observation and photography at Steigerwald Lake Refuge would be facilitated through construction of a proposed Gateway Center and interpretive trail (FWS 1999). Pending funding, the Gateway Center will be constructed east of Gibbons Creek and south of State Route 14 at the northwest entry to the Columbia River Gorge National Scenic Area (Scenic Area; see Figure 3-1 in the CCP). This compatibility determination does not propose changes to the facilities and programs approved in the Service's 1999 EA for the Steigerwald Lake Gateway Center (FWS 1999). Development will occur in two phases. In phase one, a parking area, open-air interpretive kiosk, restrooms, and an interpretive trail connecting the Gateway Center parking lot to the Dike Trail would be constructed. Annual use of the interpretive trail is projected to be 41,700 with an average daily use of 115 (FWS 1999). The interpretive trail will start at the Gateway Center, follow the toe of the raised Gibbons Creek channel south, cross the creek under a riparian canopy, and connect to the Dike Trail. A seasonal loop will branch off from the south end of the elevated channel portion of Gibbons Creek and follow a riparian area on the north side of the natural part of the creek then join the year-round portion of the trail on the Dike Trail. In its entirety, the interpretive trail will be just over two miles long. The section of the interpretive trail that is not part of the Dike Trail would be closed to horses, dogs, joggers, and bikes. Closing the interpretive trail to these non-wildlife dependent uses would improve the quality of wildlife viewing, increase safety, and reduce crowding. The kiosk and both trail sections, seasonal and year-round, will include interpretive exhibits that communicate key messages and information about the Refuge, National Wildlife Refuge System, and the Scenic Area.

Phase two of the project would expand parking and construct a staffed Gateway Center with static and interactive displays and information panels, outdoor interpretive kiosk with a viewing platform, spotting scopes, restrooms, brochures and other written literature, audio visual programs, indoor classroom space and equipment, and a bookstore.

The Service would develop and implement an environmental education program with Service staff, volunteers, and partners that would target local schools and meet State education requirements and curriculum standards (see draft CCP Objective B5.2). Educators kits and guides would be developed, and a partnership would be developed with Washington State

University's Environmental Information Cooperative to host teacher workshops. The Gateway Center and trails would be available for teachers to conduct educational activities. Refuge staff and volunteers would provide interpretive and educational services for students, scout groups, and organizations. Other groups, organizations, and state and federal agencies may also request to use the Refuge facilities and trails. Based on visitation records at similar facilities in the Scenic Area, the Steigerwald Gateway Center is projected to host between 100,000 and 150,000 visitors per year. On peak days, the facility would accommodate 600 visitors per day with an average daily visitation of 115 (FWS 1999).

The Service would investigate the feasibility of improving the existing Steigerwald Lake overlook on State Route 14 at its intersection with Evergreen Highway for wildlife viewing. This overlook is approximately 80 feet above and 1000 feet from Steigerwald Lake.

Franz Lake National Wildlife Refuge

Existing Uses

Franz Lake is one of the few areas in the lower Columbia River containing undeveloped habitat hydrologically connected to the Columbia River. Franz Lake is designated as a Special Management Area (SMA) within the Scenic Area. These SMA lands are the region's most sensitive lands and are managed to protect and enhance recreation resources. The management plan goal for SMA is to protect and enhance recreation opportunities, in part by limiting development and uses, as designated in recreation intensity class guidelines. Franz Lake Refuge is classified as very low-intensity recreation (Class 1). The emphasis of these lands is to provide opportunities for the public to experience solitude, tension reduction, and nature appreciation (USFS 1992). There is no public access to Franz Lake Refuge. A gravel road from the highway provides the only vehicle access onto the Refuge. One section of the road is privately-owned. The Service has an easement agreement with the property owner to use the road for administrative purposes. Under this agreement, the Service cannot permit public use of the road across private property.

In 1997, the Washington Department of Transportation partnered with the Service by widening Washington State Route 14 to install a walkway and Franz Lake overlook on the right-of-way at milepost 31.5. Interpretive panels funded by the U.S. Forest Service were installed and now offer information on the Refuge and its habitats and wildlife. The primary location for wildlife viewing and interpretation at Franz Lake would occur off-Refuge from this overlook. The interpretive panels at this location would be updated, as needed.

Proposed Uses

In the draft CCP/EA (Objective B5.3), the Service would offer a rare opportunity for the public to access Franz Lake Refuge from the Columbia River through guided kayak and canoe tours. Boats would put in at U.S. Forest Service's Saint Cloud Recreational Area, paddle upstream to the mouth of Arthur Lake, and, if water levels and obstacles allow, enter the lake. Tours would

extend onto the Refuge as far upstream as the existing beaver dam at the west end of Aruthur Lake (approximately 0.3 miles into the acquired Refuge boundary). Portages and foot travel would not be allowed on the Refuge tours. Tours would be led by a Service-approved guide and limited to no more than ten kayaks or canoes. A maximum of two tours per year would be offered between May 1 and October 1. The round trip tour would be approximately 1.8 miles. Water access from the launch to the beaver dams is approximately 0.9 miles. The Refuge Manager would limit tour size to an appropriate guide-to-paddler ratio to ensure a high quality wildlife-dependent experience. The Service may impose additional restrictions to kayak/canoe tours depending upon predicted resource impacts and disturbance and concerns for public safety. This unique opportunity would support the Lower Columbia River Water Trail currently proposed by the Lower Columbia River Estuary Partnership.

Pierce National Wildlife Refuge

Existing Uses

Visitor facilities at Pierce Refuge are limited to a parking area, portable toilet, and open sheltered area within a storage building. In recent years, the focus has been on providing environmental education. In 2000, Wolfree Inc., a non-profit science education group, applied for a Special Use Permit to conduct outdoor science classroom activities allowing students (mostly high school level) to apply scientific methods and field study applications. Their activities target rural or inner-city schools that cannot usually afford the cost to have their students participate in these kinds of activities or to experience natural areas. Two-hundred seventeen students participated in Wolfree activities on Pierce Refuge in spring 2000.

During the past three years, staff from the Service's Columbia River Fisheries Program Office have conducted two to three annual field trips relating to salmonid research within Hardy Creek. Participants have included the Oregon Museum of Science and Industry Science Camp, Mt. Hood Community College, Americorps, Vancouver area high schools, and scientists. Field trip stops were tailored to the interests of the individual group, however, typically include portions of Hardy Creek and visits to the spawning channel. The maximum number of people attending these field trips was 43; the average number of participants per year has been 100.

Additional public use of Pierce Refuge has included staff guided tours and field trips. These have included one or two field trips per year, with an average of 25 cars each trip. Recent staff-led interpretive and wildlife observation tours have included the Friends of the Columbia River Gorge and the Vancouver Audubon Society.

Proposed Uses

Educational organizations would be allowed to use Pierce Refuge for appropriate environmental education programs within the provisions of a Special Use Permit (see draft CCP Objective B5.2). The Service would develop a Site Design Plan for the Refuge to assess environmental education facility needs and placement of restrooms, parking area, and an all-weather shelter. The Gorge Refuges would develop and implement an environmental education program with Service staff, volunteers, and partners. The program would be designed to target local schools and meet State education requirements and curriculum standards. Educators kits and guides would be developed. Refuge staff would partner with Washington State University's Environmental Information Cooperative and others to host teacher workshops. Educational sites would be established at Pierce Refuge and specific curriculum developed for each educational site (CCP Figure 3-6). These sites would concentrate use to specific controlled locations, thereby reducing resource impacts, while maintaining a quality educational opportunity. Proposed educational activities on Pierce Refuge would be limited from 40 to 60 people (estimated number of students in two to three classrooms) per tour, one tour per day, and no more than two tours per week.

Public outreach and interpretation proposed within the preferred alternative (Objective B5.1) include offering up to five (total) annual tours with interested partners on Pierce and Steigerwald Lake Refuges. Group tours of Pierce Refuge would be encouraged from March through June; attendance would be limited to 40-60 people per tour, one tour per day, and no more than two tours per week. A parking area and vault toilets would be constructed to accommodate the increased use. In addition, the Service would offer wildlife and photography viewing during special events such as National Wildlife Refuge Week, National Migratory Bird Day and the Lewis and Clark Bicentennial. A Special Use Permit may be issued to groups and individuals to allow non-guided use of Pierce Refuge. The public would be encouraged to view wildlife from an existing paved trail located on property belonging to the town of North Bonneville along the east boundary of Pierce Refuge.

Availability of Resources:

Additional funding for staffing and operational costs would be needed to fully implement the proposed environmental education, interpretation, wildlife observation, and photography programs within the preferred alternative of the CCP/EA (Table 1). Funding needs for the construction, maintenance and operation of the Steigerwald Lake Gateway Center and trails are also included in this cost analysis. These needs are expected to be added from the CCP and are tied to funding requests in the form of Refuge Operating Needs System (RONS) and Maintenance Management System (MMS) projects for these activities. Other funding sources would be sought through strengthened partnerships, grants, and donations to administer and manage a safe and quality environmental education, interpretation, wildlife observation, and photography program as described above.

Table 1. Estimated costs (excluding Service personnel costs) to implement environmental education, interpretation, wildlife observation, and photographic activities proposed in Alternative B of the Gorge Refuges CCP.

Project	Duration (Years)	Costs (x \$1,000)			RONS or MMS Code ¹
		First Year	Recurring (years)	15-yr Total	
Projects					
Construct vehicle parking, signs and comfort station at SLR	15	144	2 (14 yrs)	172	99100971
Construct Visitor Center at SLR	2	5,148		5,148	99110464
Setup and operate Gateway Center	15	74	35 (14 yrs)	564	99002
Construct and maintain Steigerwald Interpretive Trail	15	150	3 (every 5 yrs)	159	99122403
Public outreach events	15	5	5 (14 yrs)	75	00001/00002
Design or update overlooks	1	25		25	00001/00002
EE and interpretive materials	15	15	5 (every 5 yrs)	30	00001/00002
Media materials developed with adjoining public lands	15	10	5 (14 yrs)	80	00001 00002
Facility improvements at PR	15	25	2 (14 yrs)	53	New
Upgrade/ maintain RR-x'ing at PR	15	175	10 (14 yrs)	315	New
Develop Site Design Plan for PR	2	25		25	New
Environmental education programs and partnerships with local schools	15	10	8 (14 yrs)	122	00001/00002 98009
Associated Resource Protection					
Law enforcement supplies/equipment	15	65	5 (14 yrs)	135	98009

¹ RONS (Refuge Operating Needs System) and MMS (Maintenance Management System) are national databases of unfunded operational and maintenance needs for refuges. If the proposed project is not in the database, the project is "new."

Table 2. Annual salary and benefits for proposed staff to accomplish environmental education, interpretation, wildlife observation, and photographic activities identified in the Gorge Refuge CCP.

Position Title	Funding Status	Proportion of FTE ^a	Series /Grade	Annual Cost (x1000) ^{xx}
Outdoor Recreation Planner ^b	unfunded	1.0	GS- 0023-9	\$55
Park Ranger/LEO ^b	unfunded	1.0	GS-025-7	\$50
Information & Education Specialist ^b (PPT)	unfunded	0.5	GS-1001-5/7	\$25

^a FTE = Full Time Equivalent

^b This position is in the RONS database

Anticipated Impacts of the Uses:

The purpose of this section is to critically and objectively evaluate the potential effects that environmental education, interpretation, wildlife observation, and photography could have on the wildlife, habitat, and natural resources, through the use of professional judgement and available information.

Steigerwald Lake Refuge

Potential Impacts from Construction of Gateway Center and Interpretive Trail

Construction of the Gateway Center, parking, and entrance road is anticipated to result in the direct loss of approximately seven acres of upland pasture (FWS 1999). The facility will have a low vertical profile with extensive design features to make the Gateway Center visually subordinate to the surrounding landscape. Habitat impacts will be compensated by off-site enhancement of approximately 35 acres of upland fields (former pasture) in South Stevenson Unit. Enhancement will consist of weed control, haying, or mowing and other pasture improvement as necessary including fertilization, interseeding, planting, aeration, and harrowing. In addition, over nine acres of native riparian vegetation will be established for habitat diversity, riparian protection, and visual screening.

Trail construction may have physical impacts related to soil through compaction and erosion. Impacted soils may be less productive for native flora, and trail users may introduce and spread invasive or undesirable plant species. However, the interpretive trail would follow established roads and, therefore, trail construction is anticipated to result in minimal impacts to habitat. The trail will pass through approximately two acres of wetland habitat. Impacts to wetlands will be minimized through best practices design such as elevated boardwalks. Potential impacts to riparian vegetation would be reduced by widening the existing forest corridor adjoining the proposed trail.

Potential Impacts from Environmental Education and Interpretation

The Steigerwald Gateway Center and Interpretive Trail will provide a quality learning environment for students and teachers. Anticipated effects resulting from operation of the Gateway Center were explained in the 1999 Environmental Assessment (FWS 1999). Educators will have access to an indoor classroom at the Gateway Center, and Refuge staff and volunteers will provide educational services year-round. The Service proposed to establish an environmental education program for the Gorge Refuges in cooperation with volunteers and other partners. Effective visitor education is crucial to build support of public use restrictions and the necessity of such restrictions for wildlife and habitat. Visitors who interact with refuge volunteers will be less likely to disturb wildlife (Klein 1993). The program would target local schools, with Refuge staff providing school visits. Use of the Gorge Refuges for environmental education would largely be concentrated to developed facilities and trails. Additionally, environmental education “sites” would be selected for their teaching value and ability to withstand human disturbance. Environmental education sites would be located away from sensitive areas.

Potential Impacts from Wildlife Viewing and Photography

Activities that occur outside of vehicles (e.g., wildlife observation, trail hiking, and environmental education tours) tend to increase disturbance potential for most wildlife species (Klein 1993). Human activities along trails disturb wildlife, often resulting in flushing from roosting, feeding, nesting, or resting areas. Flushing may result in expenditure of energy reserves, abandonment from preferred habitat, and increased exposure to predation during relocation. In riparian habitats, the abundance of bird species requiring shrub cover (e.g., MacGillivray’s warbler and lazuli bunting) may be reduced at recreation sites, while species that forage in tree canopies may be unaffected. Trails in riparian areas may encourage the penetration of new animal species, including nest predators, into formerly protected forests (Knutsen and Neaf 1997). Wildlife photographers tend to have the largest disturbance impacts because they may remain close to wildlife for prolonged periods (Klein 1993). Casual photographers with low-power lenses may approach wildlife closer than other users.

Most wildlife viewing and photography on the Gorge Refuges would occur at the proposed Steigerwald Lake Gateway Center and interpretive trail and along the existing Dike Trail. Potential impacts to wildlife from these activities were evaluated in the Steigerwald Lake Gateway Center Environmental Assessment (FWS 1999). Wildlife of primary concern are several species of waterfowl including Canada geese and ducks, wading and shorebirds, raptors, some species of fish in the creek channel, and a colony of purple martins that use nesting gourds placed along the Columbia Dike Trail by the Refuge staff and volunteers during the nesting season. Wildlife disturbance from visitors at the Gateway Center and interpretive trail would be minimized through facility siting, vegetation screening, and seasonal trail closures (FWS 1999).

Continued public uses of the Columbia River Dike Trail at Steigerwald Lake Refuge would have minor impacts to wildlife in adjacent habitat that is within visual or auditory range of the trail.

Public uses are limited to the dike surface which is set back from the fields along the extreme south boundary of the Refuge. The dike's elevation above surrounding terrain allows trail users to view wildlife at the interior of the Refuge at a distance that would not noticeably disturb the wildlife. The dike is sufficiently wide at its base to provide a buffer to wildlife from public use occurring on the dike top. Primary foraging areas for Canada geese are sufficiently distant from the trail to prevent recurring human disturbance. Further, riparian forest and old field vegetation buffer the managed fields and provide a visual barrier. The shoulders of the dike have minimal value as wildlife habitat.

In cooperation with the Port and Clark County Parks Department, the Service would develop an entry sign and information kiosk on the Columbia Dike Trail at the entrance to Steigerwald Lake Refuge. These interpretive features would be developed along the Dike Trail and would have little resource impacts, as these sites are already highly altered by the dike.

Remote viewing is arguably the least disruptive method of wildlife observation due to the distance from wildlife and predictable human activity at a fixed point. Wildlife viewing of Steigerwald Lake is proposed from an existing overlook on State Route 14 near its intersection with Evergreen Highway. This pullout is approximately 80 feet above and 1000 feet from Steigerwald Lake and adjoins the railroad. Disturbance from vehicles and trains would nullify any potential disturbance from people viewing wildlife at the overlook.

Franz Lake Refuge

Remote viewing would continue at the existing Franz Lake Refuge overlook from State Route 14. The overlook is located approximately 100 feet above and 300 feet away from Franz Lake and is buffered by forest. The overlook is situated on the highway right-of-way and adjacent to a railroad. The combined noise and motion associated with these major transportation corridors make the disturbance of distant wildlife observers negligible.

Proposed kayak and canoe tours of Franz Lake would provide the only public access to Franz Lake Refuge. Boating intensity is directly related to waterbird response with different species displaying varying tolerance levels. Boating activity may discourage waterfowl from using otherwise adequate habitats (Jahn and Hunt 1964). The effects of boats may be greatest on small lakes where options for sanctuary are limited. In comparison to motorized boats, non-motorized boats may be the least disruptive to wildlife due to speed of approach and noise. However, canoes and kayaks may cause significant disturbance based on their ability to navigate into productive shallow marsh habitats. Deeper draft vessels, like motorboats, would be physically precluded from many shallower marsh habitats.

The guided kayak and canoe tours of Franz Lake Refuge would support multiple recreational opportunities, including wildlife observation and photography, and wildlife interpretation and education. The Service would minimize resource impacts through the aforementioned

techniques (i.e., approval of routes, party size limits, dates, frequency of tours, and other tour restrictions).

Pierce Refuge

The Service proposes to establish an environmental education program for the Gorge Refuges in cooperation with volunteers and other partners. Effective visitor education is crucial to build support of public use restrictions and the necessity of such restrictions for wildlife and habitat. Visitors who interacted with refuge volunteers would be less likely to disturb wildlife (Klein 1993). Environmental education at Pierce Refuge would be concentrated at existing developed facilities and trails and at designated environmental education learning sites. These sites, identified in the draft CCP, would be selected for their teaching value and ability to withstand human disturbance. Additionally, the Service would develop a site-design plan for Pierce Refuge to assess environmental education facility needs and future placement of restrooms, parking area, and all-weather shelter.

Remote viewing is proposed at Pierce Refuge from an existing public trail in the town of North Bonneville along the Refuge's east boundary (see map in CCP/EA). This trail is a segment of a larger trail network through North Bonneville. Disturbance occurring along the trail and in the yards of adjoining houses have been largely present since Refuge acquisition. Promotion of wildlife observation and Refuge interpretation along the trail would have minimal impact above the current baseline disturbance associated with the neighboring community.

Public Review and Comment:

Public review and comment are required before issuing a final compatibility determination. Public review and comment on compatibility determinations will occur concurrent with the 30-day public comment period for the draft CCP/EA. Comments received will be addressed in the final CCP/EA and compatibility determinations.

The public will be notified of the availability of the draft CCP/EA and compatibility determination through the following sources:

- Federal Register Notice of Availability of Draft CCP/EA
- Refuge CCP Planning Update Number 3 sent to the CCP mailing list
- News releases sent to Vancouver, Camas-Washougal, and Skamania County newspapers

Printed copies of the CCP/EA, with compatibility determinations, will be available for public review on site at the Ridgefield and Steigerwald Lake Refuge offices, at libraries in the towns of Stevenson and Washougal, Washington, and at the Fort Vancouver Regional Library in Vancouver, Washington. The public can request an electronic or paper copy of this compatibility determination by contacting the Ridgefield and Columbia Gorge Refuge offices. Compatibility determinations will also be available online as an appendix to the CCP/EA. The Service's Region 1 Planning Division website address will be identified in the Planning Update

and news releases.

Determination:

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility:

Applicable to All Three Gorge Refuges

- Wildlife-dependent public uses would be restricted to Refuge-specific designated trails, public use facilities, or approved guided events. Unguided recreational activities occurring in closed areas would not be allowed unless operating under provisions of a Special Use Permit and stipulations set by the Refuge Manager.
- Monitoring protocol would be developed to examine the impacts associated with differing levels and types of public use. Monitoring data would be critically analyzed and used by the Refuge Manager to develop future modifications, if necessary, to ensure compatibility of wildlife observation, photography, interpretation, and environmental education programs.
- A full-time permanent Outdoor Recreation Planner and permanent part-time Information and Education Specialist and a permanent full-time Refuge Law Enforcement Officer/Park Ranger for the Ridgefield National Wildlife Complex are needed to expand and enhance public use of the Gorge Refuges above the current level of use.
- Construction of new facilities and signs in the Scenic Area would undergo a review by the U.S. Forest Service and Columbia Gorge Commission for consistency with the Scenic Area plan.

Steigerwald Lake Refuge

- Construction of the approved Gateway Center and interpretive trail would conform to the FONSI (FWS 1999) for these proposed facilities.
- All groups using the Gateway Center, its associated trails, and environmental education sites would be required to make reservations in advance through the Refuge office. The reservation system would limit group size, location, and frequency; while accommodating efforts to minimize disturbance, reduce resource impacts, and maintain a high quality wildlife-dependent experience.
- Environment education at Steigerwald Lake Refuge would be facilitated through the Gateway Center and interpretive trail.
- Observation areas and interpretive features constructed in conjunction with the Gateway Center and associated trails would avoid sensitive areas (vegetation, soils, hydrology, significant wildlife use). These features would be placed at locations with limited resource impacts and disturbance. Observation areas and scopes would be provided to encourage wildlife observation from a distance, which would reduce disturbance.

- The portion of the interpretive trail located off the Columbia Dike would be open only to pedestrians.
- Trail etiquette, appropriate environmental education site uses, and ways to reduce wildlife disturbance would be discussed with teachers during workshops and with students upon arrival to the Refuge.
- Public use trails would be monitored for nonnative species and other resource impacts.

Franz Lake Refuge

- Public access onto Franz Lake Refuge by boat would be by nonmotorized craft (i.e., kayak or canoe) under the leadership of Refuge staff and/or Service authorized guide.
- A maximum of two tours per year would be offered.
- Tours would be offered between May 1 and October 1 to avoid disturbance to wintering waterfowl.
- Boats would put in at the U.S. Forest Service's Sam's Walker Recreation Area.
- Portages and foot travel would not be allowed on the tours.
- The Refuge Manager would limit tour size to an appropriate guide-to-paddler ratio to ensure a high quality, safe wildlife-dependent experience. Additional restrictions may be imposed by the Refuge Manager to respond to potential resource impacts, wildlife disturbance, and human safety.

Pierce Refuge

- All public access points onto Pierce Refuge from State Route 14 would comply with federal and state requirements for visitor safety.
- Environmental education sites at Pierce Refuge are identified in the CCP and would be monitored for nonnative species and other significant resource impacts.
- Trail etiquette, appropriate environmental education site uses, and ways to reduce wildlife disturbance would be discussed with teachers during workshops and with students upon arrival to the Refuge.
- Public use trails would be monitored for nonnative species and other significant resource impacts.

Justification:

Environmental education, interpretation, wildlife observation, and photography are wildlife-dependent priority public uses of the National Wildlife Refuge System and would contribute to fulfilling provision of the National Wildlife Refuge Administration Act, as amended in 1997. Providing quality opportunities for wildlife observation, photography, environmental education, and interpretation would support Refuge goals of developing and encouraging public support and understanding for the purposes and vision for these Refuges. Although, some impacts are anticipated in developing these programs, efforts would be made to ensure they are minimal. The benefits of these programs to education, resource appreciation, and advocacy of both the Refuges and Refuge System would outweigh the short term impacts described above.

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Compatibility Determination

Use: Horseback Riding, Jogging, Bicycling, and Dog-Walking on the Columbia River Dike Trail

Refuge Name: Steigerwald Lake National Wildlife Refuge

Description of Use:

Existing Uses

A 5.5-mile long flood control levee separates the historic Steigerwald Lake basin from the Columbia River. Constructed in 1965-1966 by the U.S. Army Corps of Engineers (Corps), the dike marks the south boundary of Steigerwald Lake National Wildlife Refuge (Refuge). In addition to the Refuge, the dike protects agricultural, residential, commercial, and industrial properties. The dike rises approximately 15 to 20 feet above the ground elevation. A gravel surface road, 12 to 15 feet wide, extends along the full length of the dike on its top. A 3.6-mile long section of this road (between Steamboat Landing and the east boundary of the Refuge) is commonly referred to as the Columbia River Dike Trail (Dike Trail). Approximately 1.1 miles of the Dike Trail are on property owned by the Port of Camas/Washougal (Port) and 2.5 miles of the trail are on the Refuge. The remaining 1.9 miles of dike road (not currently part of the Dike Trail) are on private land within the Refuge's approved acquisition boundary. A locked gate on the dike prevents public access to this section of the dike road.

The section of dike constructed on the Refuge is within a permanent easement and right-of-way owned by the Port. The grant of easement provides the right to "reconstruct, maintain, repair, operate and patrol a flood protection project consisting of a dike or levee and its appurtenances." Vehicle access to the dike is currently controlled by the Port. While the Port is legally responsible for maintaining the dike, including the gravel road, the U.S. Fish and Wildlife Service (Service) retains authority to control public access to and use of the portion of the dike crossing its property. Although the Refuge is closed to the public, the Service neither enforces the closure on the Dike Trail nor discourages the public from using the trail. Public access onto the Dike Trail is from a developed trailhead on Port property. The trailhead consists of parking, trash cans, and signs.

The Dike Trail is used for a variety of public recreational activities. Dugger (2003) recorded the number of people and type of activity he observed while walking the Dike Trail between March 20, 2002, and March 30, 2003. Because these data were not collected using a systematic study design or protocol, they are not suitable for statistical analysis. Rather, results provide a "snapshot" of common trail uses occurring during certain times of the day and throughout the year. Surveys were conducted during daylight hours on 76 separate days, with most surveys occurring in the afternoon (34 percent) or evening (59 percent). Surveys occurred throughout the week, with 46 percent of surveys occurring on weekends. On average, 9.7 people (n = 705 surveys;

range one to 30) were observed using the dike trail during the two to three hour survey period. Users were categorized into three groups: bicyclists (17 percent), joggers (17 percent), and hikers (67 percent). Dogs accompanied people participating in these activities, with an average of about three dogs for every ten humans counted. Approximately 43 percent of these dogs were off-leash.

Horseback riders (equestrians) use the Dike Trail, although Dugger (2003) did not observe this use in his 12-month survey. Because all horses that use the Dike Trail must be transported to the trailhead in a trailer, space for parking and unloading horse trailers close to the trail effectively limits the amount of horseback riding that can occur at any given time. Currently, the Port maintains a parking area for horse trailers on their property at the foot of the dike. Depending on the size and style of trailer used, three to five trailers can fit in the parking area at one time. When the parking area is full, three to ten horses can be expected to be using the Dike Trail. Based on information the Refuge staff obtained from a local horseback riding group, this level of use is uncommon. Equestrians report that, typically, no more than four trailers are observed in the parking area and usually no more than eight horses use the Dike Trail at one time. According to the horse riding group, organized trail riding events have occurred on the Dike Trail, with as many as 15 horses using the trail at one time, but such events are uncommon. Although use is year-round, the primary seasons of use appear to be fall through spring when low-elevation areas suitable for horseback riding are in shortest supply. The Dike Trail's well-drained surface is especially attractive to horse riders during the wet season when most other areas are muddy or inaccessible. Use declines in summer when the trail and adjacent Cottonwood Beach are crowded.

Proposed Uses

The Refuge proposes to allow horseback riding, jogging, bicycling, and dog-walking to continue on the Dike Trail with stipulations to ensure public safety and compatibility of these uses. In addition to these non-wildlife dependent Refuge uses, wildlife-dependent uses such as wildlife observation and photography would occur on the Dike Trail, as described in a separate Compatibility Determination. Each of the proposed uses is described in more detail below.

Horseback Riding. Horseback riding is proposed only on the gravel surface of the Dike Trail. Restricting horses to the road surface would prevent soil erosion and trail widening that commonly occurs with equestrian trails. Furthermore, the Dike Trail meets or exceeds standards recommended by the Federal Highway Administration (2001) for shared-use and universally accessible trails. The Refuge staff would seek the cooperation of users and develop partnerships with interested groups to insure compliance with compatibility stipulations and protection of Refuge resources. Without user compliance, the use would be terminated.

The anticipated amount of use would not exceed 10 horses at a given time, and no more than 15 horses per day. Organized horseback riding events involving between 10 and 15 horses may be permitted under a Special Use Permit issued to the group leader. Groups larger than 15 would

not be allowed to use the Refuge portion of the Dike Trail. Riders would not be allowed to tie a horse to any physical structure or vegetation, and they must remain with their horse at all times. The Refuge would not be responsible for maintaining the dike surface but would cooperate with the Port to impose any public use restrictions deemed necessary to protect the flood control capacity of the dike. The Refuge would neither encourage horseback riding, nor would it provide support facilities such as trailer parking, hitching posts, water or access to the Columbia River. In the past, the Port has provided these facilities, and there is no reason to assume they would not continue to do so in the future.

To ensure safety of horse riders and other user groups sharing the trail with horses, horseback riding would only be allowed between sunrise and sunset. Horses must be walked (no trotting or cantering). Pedestrians and bicyclists must yield to equestrians, and groups of riders (\geq two horses) must travel single file. Signs explaining rules for safe, compatible horseback riding would be installed on the Dike Trail in cooperation with the Port.

Horseback riding would be monitored annually with other uses of the Dike Trail to ensure it does not interfere with compatible, wildlife-dependent recreational activities and to ensure safety of all user groups. The Refuge or Refuge volunteers would periodically survey horse use to refine use estimates and to evaluate compliance. Plant surveys would be conducted to assess the spread and invasion of non-native and invasive plants associated with horse use of the Dike Trail. Adjustments to the number of horses allowed to use the trail at one time and at specific times of the year may be needed to ensure the use remains compatible. This CD would be revised in 10 years or sooner to incorporate additional data and new information.

Jogging. Jogging is proposed only on the Dike Trail. Based on limited survey data (Dugger 2003), this would be a minimal amount of use. Trailhead parking would be available off Refuge on the Port's property. Special events such as competitions and practice meets would not be allowed on the Refuge-owned portion of the Dike Trail.

Bicycling. Bicycling is proposed only on the Dike Trail. Trailhead parking would be available off Refuge on the Port's property. Special events such as competitions and practice meets would not be allowed on the Refuge-owned portion of the Dike Trail. Group size would be limited to 10 or fewer riders. To ensure safety of bicyclists and other user groups sharing the trail, bicycling would only be allowed during daylight hours. Bikes must be ridden at a safe speed, and bicyclists must yield to horses and pedestrians. Signs explaining rules for safe, compatible bicycling would be installed on the Dike Trail in cooperation with the Port. The Refuge staff would seek the voluntary cooperation of users to comply with these stipulations and to ensure safety of all user groups. Without user compliance, the use would be terminated.

Based on limited survey data (Dugger 2003), bicycling is not a common use on the dike trail and conflicts with other users have not been reported to the Port or Refuge staff. Bicycling would be monitored annually with the other uses of the Dike Trail to ensure it does not interfere with compatible, wildlife-dependent recreational activities. The Refuge or Refuge volunteers would periodically survey the use to refine use estimates and to evaluate compliance. This CD would be revised in 10 years or sooner to incorporate additional data and new information.

Dog-Walking. The Refuge proposes to allow people to walk dogs on a leash on the Dike Trail. Dogs would not be allowed off the gravel surface road. Dog walkers must pick up after their dog(s) and remove the feces from the Refuge. Trailhead parking would be available off Refuge on the Port's property.

Dog-walking is a popular use of the Dike Trail, often occurring in conjunction with other uses including hiking, jogging, and bicycle riding (Dugger 2003). Although Clark County ordinance requires dogs to be leashed within the urban areas of the county, a large proportion (43 percent) of dogs on the Dike Trail are unleashed. The Refuge, in cooperation with the Port, would clearly post the leash law on the Dike Trail. To reduce potential impacts to wildlife from unleashed dogs leaving the Dike Trail onto the Refuge, the Refuge would install a fence along the landward toe of the dike. Dog-walking would be monitored annually with other uses of the Dike Trail to ensure it does not interfere with compatible, wildlife-dependent recreational activities. This CD would be revised in 10 years or sooner to incorporate additional data and new information.

Availability of Resources

In the Refuge's draft Comprehensive Conservation Plan (CCP), the Service proposes to officially open the Dike Trail to the public. Recurring costs to administer existing levels of horseback riding, bicycling, jogging, and dog-walking on the Refuge's portion of the Dike Trail would be negligible because the Port currently covers costs for maintaining the dike road and gates and provides trash cans, garbage collection, signs, and parking for both cars and horse trailers on its property. Refuge costs would primarily consist of staff time to monitor public use (including wildlife-dependent and non-wildlife dependent uses), coordinate with the Port and other Refuge partners, organize volunteers to assist with educational programs and trash collection, and issue Special Use Permits for group events. Currently, one Refuge Manager administers the three Gorge Refuges. Additional staff from the Ridgefield Refuge Complex are available to assist the manager. This level of staffing is adequate to cover existing uses of the Dike Trail.

In the future, trail use by all user groups, except horseback riding, is anticipated to increase with development of a regional park at Cottonwood Beach. Horseback riding is not anticipated to increase because the park's master plan does not propose to enlarge the existing horse trailer parking area. Walking, hiking, and bicycling in Clark County are projected to increase by 34, 20, and 29 percent, respectively, over the next 20 years (Interagency Committee for Outdoor Recreation 2003). A substantial increase in public use would likely increase the amount of time Refuge staff must dedicate to managing these use on the Dike Trail. The Refuge is not fully

staffed, and although “essential staff” positions are approved, only the Refuge Manager position is currently funded. Without being fully staffed, it would be difficult for the Refuge to respond to a substantial increase in public uses of the Dike Trail. The Refuge would require assistance from trail user groups and volunteers to assist with surveys and educational programs. Organizing and directing volunteers could be accomplished with existing staff. Additionally, several of the proposed improvements identified in the Port’s master plan for Cottonwood Beach Park would assist the Refuge to administer public use with minimal cost to the Refuge. A proposed information kiosk on the dike at the entrance to the Refuge would include panels for Refuge- and trail-specific information. The Refuge’s one-time cost for the panels is estimated to be \$15,000; recurring annual costs would be approximately \$1,000 every five years. Additional signs would be needed along the Dike Trail to remind user groups about allowed uses and any trail use requirements (e.g., pick-up dog waste, pedestrians yield to horses, horses must walk). First year costs for these signs would be approximately \$1,000, with recurring costs of about \$1,000 every five years.

A large proportion of dogs on the Dike Trail (approximately 43 percent) are not leashed (Dugger 2003). Signs and educational materials would increase compliance with the County leash law but not eliminate unleashed dog use. A fence would be constructed at the toe of the dike to prevent unleashed dogs from leaving the Dike Trail if monitoring determines this is a problem. Development costs for the fence are estimated to be \$45,000; recurring costs would be approximately \$1,000 every five years.

Anticipated Impacts of the Use

A primary concern for allowing any public use to occur on Steigerwald Lake Refuge is to maintain adverse impacts within acceptable limits. One of the functions of this section is to determine whether adverse impacts are within or exceed acceptable thresholds. This section also addresses potential conflicts between user groups that share the Dike Trail, as well as public safety concerns. The potential impacts of proposed public uses of the Dike Trail are evaluated in detail in the Environmental Consequences section (Chapter 5) of the draft CCP/EA and are summarized below. These include 1) impacts to the habitat, 2) wildlife disturbance, and 3) conflicts between user groups.

Impacts to Habitat

Both hikers and horses cause structural damage to plants and increase soil compaction. The degree of surface compaction is dependent on topography, soil structure, and soil moisture (Whittaker 1978). Impacts of trampling on vegetation and soils commonly noted on trails (e.g., Liddle 1975) are unlikely to occur on the well-defined, gravel surface of the Dike Trail. Pursuant to its grant of easement, and as required by the Corps, the Port maintains, repairs, operates, and patrols the dike and its appurtenances for purposes of flood protection. Maintenance activities include mechanical removal of trees, shrubs, and tall vegetation from the dike, herbicide spraying, road grading, and gravel replenishment, as needed. Public uses of the

dike road are secondary to flood control purposes, and result in minor additional direct impacts to wildlife habitat.

Although equestrians, bicycle riders, joggers, and dog-walkers would be required to remain on the Dike Trail, some users may leave the trail for the Columbia River or Refuge wetlands to provide drinking water for their horses and dogs or to view areas off the dike. Plants may be trampled in the process and wildlife disturbed. Currently, there is little evidence of users leaving the dike top. Dense vegetation and uneven terrain off the Dike Trail apparently discourages users from leaving the dike top. The well-drained trail provides an appropriate surface for equestrians, joggers, and bicycle riders, particularly when off-trail areas are wet or muddy.

Trail corridors function as habitat and conduits for movement of plant species, including non-native, invasive species (e.g., see Dale and Weaver 1974). Horse droppings are a source of non-native plant seeds that readily germinate and grow on disturbed sites (Benninger-Truax et al. 1992). Bicycles are another potential seed dispersal mechanism. Vehicle traffic associated with dike maintenance and Refuge management activities may introduce and spread non-native species onto the Refuge. Rapid dispersal of weeds is characteristic of motorized routes; a vehicle in one trip can spread 2,000 knapweed seeds over a 10-mile course (Montana State University Extension Service Bulletin 1992 [cited in Douglass et al. 1999]). Several factors minimize the potential impacts of invasive plants that may be introduced and spread by the proposed public uses. First, public uses would be restricted to the level, gravel road surface, which would tend to prevent the transportation of non-native seed from the dike onto the Refuge by water, gravity, or wind. Second, invasive plants that germinate on the dike top and side-slopes would be treated with herbicide. Third, monitoring and surveillance of invasive species would increase under the Service's preferred alternative for the Gorge Refuge CCP/EA, reducing the potential for new invasive species to become established on the trail and spread into the Refuge. Finally, public education about invasive species would be incorporated into Refuge interpretive displays at the Dike Trail kiosk and Gateway Center.

Impacts from Wildlife Disturbance

General Response of Wildlife to Disturbance. Immediate responses by wildlife to recreational activity can range from behavioral changes including nest abandonment or change in food habits, physiological changes such as elevated heart rates due to flight, or even death (Knight and Cole 1995). The long term effects are more difficult to assess but may include altered behavior, vigor, productivity or death of individuals; altered population abundance, distribution, or demographics; and altered community species composition and interactions. According to Knight and Cole (1991), there are three wildlife responses to human disturbance: 1) avoidance; 2) habituation; and 3) attraction. The magnitude of the avoidance response may depend on a number of factors including the type, distance, movement pattern, speed, and duration of the disturbance, as well as the time of day, time of year, weather; and the animal's access to food and cover, energy demands, and reproductive status (Knight and Cole 1991; Gabrielsen and

Smith 1995). Knight and Cole (1991) suggest that sound may elicit a much milder response from wildlife if animals are visually buffered from the disturbance.

Habituation is defined as a form of learning in which individuals stop responding to stimuli that carry no reinforcing consequences for the individuals that are exposed to them (Alcock 1993). A key factor for predicting how wildlife would respond to disturbance is predictability. Often, when a use is predictable -- following a trail or boardwalk or at a viewing deck -- wildlife will accept human presence (Oberbillig 2000). Gabrielsen and Smith (1995) suggest that most animals seem to have a greater defense response to humans moving unpredictably in the terrain than to humans following a distinct path.

Wildlife may be attracted to human presence. For example, wildlife may be converted to “beggars” lured by handouts (Knight and Temple 1995), and scavengers are attracted to road kills (Rosen and Lowe 1994).

Burger (1999 as cited by Oberbillig 2000) suggests that viewing distances can serve as useful guides for managers lacking good site-specific information and serve as a starting point in determining what is appropriate elsewhere. Some factors that affect viewing distances include the numbers of viewers, the time of day, and noise level. When exposing nonbreeding waterbirds to four types of human disturbances (walking, all-terrain vehicle, automobile, and boat), Rodgers and Smith (1997) concluded that a buffer zone of 330 feet would minimize flushing of foraging or loafing waterbirds. Vos et al. (1985) recommended buffer zones of 820 feet on land and 490 feet over water for great blue herons. Miller et al. (1998) found that the trail zone of influence for forest and grassland birds appears to be approximately 250 feet. Beyond this distance, bird abundance, species composition, and nest predation was not affected by heavily-used recreational trails.

Wildlife Response to Horseback Riding. Horseback riding may influence the behavior of various wildlife species. Observations by Owen (1973) and others suggest that many species of wildlife are habituated to livestock and are less likely to flee when approached by an observer on horseback than by an observer on foot. In one study (Owen 1973), equestrians could approach geese up to a distance of 150 feet without noticeable behavioral changes in the geese. This is compared to suggested hiking trail distance of 250 feet (Miller et al. 1998). Given the distance between the Dike Trail and nearest wetland area or field managed for Canada geese is over 400 feet, horse use is not expected to cause significant disturbance in wildlife.

Wildlife Response to Jogging. Rapid movement by joggers is more disturbing to wildlife than slower moving hikers (Bennett and Zuelke 1999). However, joggers tend to spend less time in a particular area than pedestrians and are less likely to directly approach or otherwise disturb wildlife. The effects of human disturbance are reduced by restricting human activity to an established trail. Animals show greater flight response to humans moving unpredictably than to humans following a distinct path (Gabrielsen and Smith 1995). Joggers would be restricted to an

established, well-defined path that is sufficiently distant from undisturbed wildlife habitat to prevent significant disturbance. Special events and training would not be allowed on the Refuge's portion of the trail.

Wildlife Response to Bicycling. Rapid movement directly toward wildlife frightens them, while movement away from or at an oblique angle to the animal is less disturbing (Knight and Cole 1995). Road noise has been shown to negatively affect birds (Bowles 1995), although the response is often difficult to assess because it may be confounded by responses to visual stimulus. Knight and Cole (1991) suggest that sound may elicit a much milder response from wildlife if animals are visually buffered from the disturbance. Bicycling on the Dike Trail is not anticipated to disturb wildlife because riders do not directly approach wetlands or areas where wildlife congregate, and by restricting the use to the Dike Trail, the noise source is predictable. In addition, group size would be limited by prohibiting special events and training within the Refuge's portion of the trail.

Wildlife Response to Dog-Walking. Among the proposed public uses of the Dike Trail, a human with a dog would elicit the greatest stress reaction in wildlife. In the case of birds, the presence of dogs may flush incubating birds from nests (Yalden and Yalden 1990), disrupt breeding displays (Baydack 1986), disrupt foraging activity in shorebirds (Hoopes 1993), and disturb roosting activity in ducks (Keller 1991). Many of these authors indicated that dogs with people, dogs on-leash, or loose dogs provoked the most pronounced disturbance reactions from their study animals. However, the greatest stress reaction results from unanticipated disturbance. Animals show greater flight response to humans moving unpredictably than to humans following a distinct path (Gabrielsen and Smith 1995). By restricting dog-walking to the established Dike Trail, potential disturbance to wildlife would be reduced.

Despite thousands of years of domestication, dogs still maintain instincts to hunt and chase. Given the appropriate stimulus, those instincts can be triggered. Dogs that are unleashed or not under the control of their owners may disturb or potentially threaten the lives of some wildlife. In effect, off-leash dogs increase the radius of human recreational influence or disturbance beyond what it would be in the absence of a dog. Dog-walkers would be required to maintain control of their animal while on the Refuge, thereby reducing the potential and severity of these impacts to wildlife. Educational materials and signs would be available on the Dike Trail to encourage responsible outdoor recreation ethics.

The role of dogs in wildlife diseases is poorly understood. However, dogs host endo- and ecto-parasites and can contract diseases from, or transmit diseases to, wild animals. In addition, dog waste is known to transmit diseases that may threaten the health of some wildlife and other domesticated animals. Domestic dogs can potentially introduce various diseases and transport parasites into wildlife habitats (Sime 1999).

Potential Conflicts Between User Groups

Shared-use paths attract a variety of user groups who often have conflicting needs. People with disabilities may be particularly affected by trail conflicts if they do not have the ability to quickly detect or react to hazards or sudden changes in the environment. For some trail users, meeting horses or seeing evidence of their use detracts from their experience (Watson et al. 1993). While some trail users may enjoy seeing and meeting horses on the Dike Trail, others may not. The number of encounters that create conflict is unknown. Horseback riding is not a common use of the Dike Trail and available parking for horse trailers would continue to limit its use. Further, stipulations for horseback riding include providing educational messages that may reduce conflicts and enlisting equestrians to control the quantity and extent of horse manure along the trail.

Bicycles and horses using the same trail as pedestrians and dogs may present a safety hazard to visitors. If the number of trail users increases as predicted, the potential for accidents or user group conflicts may also increase. However, the Dike Trail meets Federal Highway Administration standards for shared use path design (Federal Highway Administration 2001) and should be able to accommodate increased use. Although user groups are not physically separated, the Dike Trail provides sufficient tread width (minimum 12 feet), grade (essentially flat), viewing distance (minimum 400 yards), clearance, and a firm and stable surface for safe, shared use by pedestrians and joggers, as well as equestrians and bicycle riders traveling at a safe speed. The trail has been in use for over 30 years without any accidents reported to the Port or Refuge. Measures to reduce potential conflicts between equestrians and other user groups would include providing information at the trailhead, Gateway Center, and in the Refuge's brochure that clearly indicates permitted users and rules of conduct. Providing signs that clearly indicate which users have the right of way would help mitigate conflict (Federal Highway Administration 2001). Trail etiquette signing would clearly state that bicycles should give an audible warning before passing other trail users.

Livestock excrete a wide variety of microbial pathogens which may be of concern to human health. Pathogens are organisms (fungus, helminths, virus, protozoa, bacteria) capable of producing infectious disease. No major human disease has ever been accurately attributed to the intimate contact human beings have had with horses for thousands of years. (Deuel, 1989). Recent studies (Atwill 1997, Johnson et al 1997) confirm that adult horse guts do not significantly contain *E. coli*, *Salmonella*, *Cryptosporidium*, or *Giardia*, the organisms of most concern in waterborne disease.

Public Review and Comment:

In 1999, the Service issued a decision to close 0.6 miles of the Dike Trail on Steigerwald Lake Refuge to horses, dogs and bicycles (U.S. Fish and Wildlife Service 1999). At the time, the trail closure was deemed necessary to provide the public with a high-quality, wildlife-dependent recreational experience. The closure was not implemented and the trail remained unofficially

open to the public. When the Gorge Refuges initiated public scoping for development of its CCP in 2000, equestrians submitted comments opposing the closure. Given the overwhelming number of comments on this single issue (30 of 65 comment letters or email received), the Service stated in the second Planning Update for the CCP/EA (mailed in April 2001) that it would re-evaluate the trail closure during the CCP planning process. Refuge staff attended a regularly scheduled meeting of the Backcountry Horseman of Washington on February 27, 2002, to gather comments for the CCP. Several concerns for implementing the trail closure were expressed at this meeting. As one of the few remaining low-elevation trails in southwest Washington suitable for horseback riding in the winter and early-spring, closing the trail would be a significant loss of opportunity for equestrians. The Dike Trail is a critical link in the proposed "Chinook Trail" which would connect the Camas/Washougal area to U.S. Forest Service land in the Columbia River Gorge. Several people at the meeting stated that dogs and bicycles should also be allowed on the Trail and stated that horseback riding does not conflict with hikers. To reduce user group conflicts, the BCHW recommended educational materials and programs be developed to instruct all user groups in appropriate and safe trail use.

Public review and comment are required before issuing a final compatibility determination. Public review and comment on compatibility determinations will occur concurrent with the 30-day public comment period for the draft CCP/EA. Comments received will be addressed in the final CCP/EA and compatibility determinations.

The public will be notified of the availability of the draft CCP/EA and compatibility determinations through the following sources:

- Federal Register Notice of Availability of Draft CCP/EA
- Refuge CCP Planning Update Number 3 sent to the CCP mailing list
- News releases sent to Vancouver, Camas-Washougal, and Skamania County newspapers

Printed copies of the CCP/EA, with compatibility determinations, will be available for public review on site at the Ridgefield and Steigerwald Lake Refuge offices, at libraries in the towns of Stevenson and Washougal, Washington, and at the Fort Vancouver Regional Library in Vancouver, Washington.

The public can request an electronic or paper copy of this compatibility determination by contacting the Ridgefield and Columbia Gorge Refuge offices. Compatibility determinations will also be available online as an appendix to the CCP/EA. The Service's Region 1 Planning Division website address will be identified in the Planning Update and news releases.

Determination:

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility:

- The Service would not be responsible for maintaining the dike, road, or trail but would cooperate with the Port to impose any public use restrictions deemed necessary for the protection and maintenance of the dike for flood control.
- Horseback riding, jogging, bicycling, and dog-walking would be allowed only on the Dike Trail. These activities would not be allowed on any other part of the Refuge. In cooperation with the Port, the Service would clearly post permitted uses and rules of conduct in the information kiosk that would be developed at the Refuge boundary. A new visitor brochure or handout with a map explaining public use areas would be developed. Information would also be made available at the Steigerwald Lake Gateway center, information kiosk, and interpretive trail.
- The Refuge would not encourage or promote horseback riding on the Refuge, nor would it provide support facilities such as trailer parking, hitching posts, water or access to the Columbia River.
- Organized horseback riding events involving from 10 to 15 horses may be permitted under a Special Use Permit issued to the group leader. Groups larger than 15 would not be allowed to use the Refuge portion of the Dike Trail.
- Hitching posts would not be provided on the Refuge section of the Dike Trail. Equestrians would remain with their horse at all times and would not be allowed to tie a horse to any physical structure or vegetation while on the Dike Trail.
- To ensure safety, horseback riding and bicycling would only be allowed between sunrise and sunset. Horses would be walked (no trotting or cantering). Pedestrians and bicyclists must yield to equestrians.
- Refuge staff and volunteers would monitor uses to ensure compatibility, refine user estimates, and evaluate compliance. Potential conflicts between user groups would also be evaluated. Adjustments to the number of horses allowed to use the trail at one time and at specific times of the year may be needed to ensure the use remains compatible.
- Plant surveys would be conducted to assess the spread and invasion of non-native and invasive plants associated with the uses, particularly horse use of the Dike Trail.
- Agency and public awareness would be increased through interpretive/educational materials about responsible pet ownership in the context of wildlife disturbance during any and all outdoor recreational pursuits. Information would also address the potential role of domestic dogs in disease transmission to wildlife and vice versa in educational materials; information should include endo- and ecto-parasites.

- The Dike Trail would continue to meet the standards recommended by the Federal Highway Administration (2001) for multiple-use and accessible public trails.
- Dog droppings would be collected and disposed of properly off the Refuge by the responsible party as a courtesy to other trail users. Refuge staff would coordinate with equestrian user groups to clean up horse droppings from the trail when monitoring by the Refuge determines this is needed. If domestic animal waste becomes a problem, horseback riding and dog-walking would be reevaluated.
- Dogs would be leashed and under the control of their owners at all times.
- A fence would be constructed at the toe of the dike on the landward side of the Refuge to prevent unleashed dogs from leaving the Dike Trail if monitoring determines this is a problem.

Justification:

Horseback riding, jogging, bicycling, and dog-walking are not wildlife-dependent public uses of the Refuge, as defined by statute (16 U.S.C. 668dd et seq.). However, these uses of the existing dike road are secondary uses of a flood control project and are expected to result in only minor additional impacts to wildlife habitat. Potential for wildlife disturbance is also minimal. Restricting the disturbance to an established trail with appropriate set-back distances (buffers) would increase predictability of public use patterns on the Refuge, allowing wildlife to habituate to non-threatening activities. Moreover, consolidating compatible recreational activities to the Dike Trail, located at the edge of the Refuge boundary, reduces habitat fragmentation, thereby maintaining a core “sanctuary area” of the Refuge for more sensitive species. These impacts would be monitored and if they, or any as yet not considered impacts are discovered, this compatibility determination would be reevaluated.

The Service would not encourage or promote non-wildlife dependent public uses of Steigerwald Lake Refuge. Direct costs to administer existing levels of horseback riding, bicycling, jogging, and dog-walking on the Refuge’s portion of the Dike Trail would be minor because the Port currently covers costs for maintaining the dike road and provides all of the necessary support facilities. Recurring costs for the Refuge to administer these uses would primarily consist of staff time which are adequately covered by existing staff. With similar restrictions and budget limitations, Dungeness Refuge in northwest Washington has been very successful with managing horseback riding using public education and biological and public use monitoring (DeLong 2002). The role of volunteers at Dungeness Refuge has been a key factor in the success.

Finally, the Service should use this opportunity to reach out to non-traditional Refuge user groups; to encourage equestrians, bicyclists, joggers, and people walking their dog to observe wildlife and to learn about the National Wildlife Refuge System. With future plans to develop a regional park at Cottonwood Beach, the number and variety of users is expected to grow. For many of these people, the Dike Trail may provide a first or unique look at a wildlife refuge. In addition, should the Service complete the acquisition of lands within the approved Steigerwald Lake Refuge boundary, the Service would be in a position to provide the key link in the

proposed “Chinook Trail,” linking the Vancouver-Washougal metropolitan area with U.S. Forest Service land in the Scenic Area.

Mandatory Re-Evaluation Date:

_____ Mandatory 15-year Re-Evaluation Date (for priority public uses)

___X___ Mandatory 10-year Re-Evaluation Date (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision:

___ Categorical Exclusion without Environmental Action Statement

___ Categorical Exclusion and Environmental Action Statement

___ Environmental Assessment and Finding of No Significant Impact

___ Environmental Impact Statement and Record of Decision

Refuge Determination:

Prepared by:

(Signature)

(Date)

Refuge Manager/

Project Leader

Approval:

(Signature)

(Date)

Concurrence:

Refuge Supervisor:

(Signature)

(Date)

Regional Chief,
National Wildlife
Refuge System:

(Signature)

(Date)

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Compatibility Determination

Use: Research and Monitoring Projects

Refuge Name: Pierce, Franz Lake, and Steigerwald Lake National Wildlife Refuges

Description of Use:

Research activities would be restricted to the study and evaluation of plant and wildlife resources, natural abiotic and biotic processes, public use impacts, and management options of Refuge resources. Research may be species-specific, Refuge-specific, or may be designed to evaluate a Refuge's contributions to region-wide or national issues and trends. Studies may focus on current conditions or anticipated future conditions. This research may be conducted by but is not limited to universities, other resource agencies, wildlife consultants, and other qualified persons. The U.S. Fish and Wildlife Service (Service) would develop an Outreach Plan to promote management based research on the Refuges. Specific strategies for initiating outreach are described under Goal 4 of the Comprehensive Conservation Plan/Environmental Assessment (CCP/EA). Existing facilities would be evaluated and improved to support research programs on the Refuges. These improvements would include minor improvements to storage, lab, and office facilities.

Availability of Resources:

In most instances, research projects are funded and implemented by groups or persons outside of the Service. Refuge staff would provide oversight and logistics where needed, and would set the terms and conditions within which research projects may occur on these Refuges. These parameters would be project specific and detailed utilizing a Special Use Permit issued by the Refuge. Special Use Permits are reviewed to ensure compliance and renewed annually. The Refuge would have final determination on the applicability and allowance of the proposed use. Funds for the Refuges' administration of these projects (approximately \$2,500 annually) are available within the general operating budget of the Ridgefield Refuge Complex, which administers the three Gorge Refuges.

In some cases, the Refuge may act as a cooperator on research projects. The funding for these projects may be cost-shared and in some cases, specially designated funds may be utilized for the operation and administration of the projects.

Anticipated Impacts of the Use:

The impacts of research activities would be project and site-specific. Impacts would vary widely depending on the scope and type of research conducted. Remote or low intensity monitoring is anticipated to have minimal impacts on wildlife and resources. Some projects may entail the collection of wildlife and plants, require intensive ground surveys, or otherwise cause some disruption to wildlife or other resources. These potential impacts are detailed in Chapter 5, Environmental Consequences of the CCP/EA. Each research request would be evaluated by the

Refuge staff to weigh the anticipated impacts versus the benefits of the research activity to Refuge management. This would form the basis for allowing the project to proceed or be denied. All research projects would be assessed during implementation to ensure that impacts remain within acceptable levels. A Special Use Permit would be issued which would set the terms and conditions of the study to avoid and/or minimize the impacts on Refuge resources, public use activities, and Refuge field operations.

Public Review and Comment:

Public review and comment are required before issuing a final compatibility determination. Public review and comment on compatibility determinations will occur concurrent with the 30-day public comment period for the draft CCP/EA. Comments received will be addressed in the final CCP/EA and compatibility determinations.

The public will be notified of the availability of the draft CCP/EA and compatibility determination through the following sources:

- Federal Register Notice of Availability of Draft CCP/EA
- Refuge CCP Planning Update Number 3 sent to the CCP mailing list
- News releases sent to Vancouver, Camas-Washougal, and Skamania County newspapers

Printed copies of the CCP/EA, with compatibility determinations, will be available for public review on site at the Ridgefield and Steigerwald Lake Refuge offices, at libraries in the towns of Stevenson and Washougal, Washington, and at the Fort Vancouver Regional Library in Vancouver, Washington.

The public can request an electronic or paper copy of this compatibility determination by contacting the Ridgefield and Columbia Gorge Refuge offices. Compatibility determinations will also be available online as an appendix to the CCP/EA. The Service's Region 1 Planning Division website address will be identified in the Planning Update and news releases.

Determination

☐ Use is Not Compatible

☒ Use is Compatible with the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

Researcher Stipulations:

- All researchers would be required to submit a detailed research proposal for review and recommendation by the Refuge Biologist and approval by the Refuge Manager. The required proposal format would be provided to researchers.
- A Section 7 review under the Endangered Species Act would be required for research

activities that may have an impact on threatened or endangered species.

- Special Use Permit conditions must be adhered to or the research would be suspended.
- Research progress reports are required at least annually, and final reports are due within one year of the completion of the project, unless negotiated otherwise.
- The Refuge would receive copies of all future publications developed from Refuge projects.
- Upon completion of the project or annually, research sites must be cleaned up to the manager's satisfaction and all physical markers removed. For long-term projects, conditions for clean-up, and removal of equipment and physical markers would be stipulated in the Special Use Permit.

Administrative Stipulations:

- The Refuge Biologist would review all research proposals and make a recommendation to the Refuge Manager on whether the research would be beneficial to the Refuge, Ecoregion, or Region. Projects would be expected to utilize standard research protocols and quality controls, as defined by the Service, to maximize the likelihood of a successful project while avoiding or minimizing impacts to Refuge resources.
- The Refuge Biologist would identify terms and conditions such as location, timing, and equipment restrictions to be put in the Special Use Permits in order to eliminate or minimize negative impacts to any one area, species, or habitat of the Refuge.
- Research requiring the collection of plants or animals would only be authorized after careful consideration by the Refuge Biologist and Refuge Manager as to the importance of individuals to the conservation of the species, the possible adverse impacts to the Refuge populations, and the humaneness of the collection methodology. All collected specimens remain the property of the Service unless stipulated otherwise within the Special Use Permit.
- The Refuge Biologist and Refuge Manager would monitor the impacts of the project and its compliance with the Special Use Permit. If monitoring efforts detect unacceptable impacts to Refuge resources or programs, the research project would be reevaluated and the Special Use Permit may be amended to reduce impacts.

Justification:

Research and monitoring projects may provide important species and habitat data, or evaluate current or future management techniques. These projects may have direct implications to current or proposed Refuge management actions, or may apply to species or resources on a broad basis. Often the knowledge gained has applicability for other land managers, scientists, universities and interested natural resource-oriented persons. The collection and reporting of resource data are important tools for achieving the mission of the Service. Research and monitoring is essential for maintaining a high degree of integrity and adaptability within refuge management programs. Special Use Permits and project

monitoring by Refuge staff would be utilized to ensure that impacts to Refuge resources and programs would be kept within acceptable limits.

Mandatory Re-Evaluation Date

_____ Mandatory 15-year Re-Evaluation Date (for priority public uses)

___X___ Mandatory 10-year Re-Evaluation Date (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision

___ Categorical Exclusion without Environmental Action Statement

___ Categorical Exclusion and Environmental Action Statement

___ Environmental Assessment and Finding of No Significant Impact

___ Environmental Impact Statement and Record of Decision

Refuge Determination:

Prepared by:

(Signature)

(Date)

Refuge Manager/
Project Leader

Approval:

(Signature)

(Date)

Concurrence:

Refuge Supervisor:

(Signature)

(Date)

Regional Chief,
National Wildlife
Refuge System:

(Signature)

(Date)

Compatibility Determination

Use: Grazing and Haying Cooperative Land Management Program

Refuge Name: Steigerwald Lake National Wildlife Refuge (Refuge), Washougal, Washington

Description of Use:

In accordance with the Comprehensive Conservation Plan/Environmental Assessment (CCP/EA) for the Columbia Gorge Refuges, this compatibility determination proposes to continue the use of grazing, mowing and haying on selected grasslands of the Steigerwald Lake National Wildlife Refuge (Refuge) to provide high quality forage for migrating and wintering Canada geese, utilizing the same grazing and haying programs that have been used in the past. Cattle have grazed these fields for many years, initially to provide pasture and since the Refuge has been established to provide winter forage for Canada geese. A compatibility determination was completed for grazing at Steigerwald Lake Refuge in 1994 (U.S. Fish and Wildlife Service 1994) ; this is the first for haying. This compatibility determination proposes these activities be continued.

One of the goals of the draft Comprehensive Conservation Plan/Environmental Assessment (CCP/EA) for the Columbia River Gorge Refuges is to “Protect, restore and enhance the natural diversity of floodplain habitats, upland forest, and grasslands representative of the lower Columbia River ecosystem”. To support this goal, the objective for grasslands at Steigerwald Lake Refuge is to maintain 168 acres in short (3 to 6 inches tall), perennial grass, utilizing grazing, mowing, and haying as strategies to accomplish this objective.

The need for providing food in the form of short grasses for Canada geese wintering in the Pacific Northwest has long been recognized. National wildlife refuges (Western Oregon Refuge Complex and the Ridgefield Complex) along the Willamette Valley and Lower Columbia River (WV-LCR) have provided short grass for wintering geese since their establishment in the 1960's, and Ridgefield Refuge has successfully used grazing to provide winter goose forage for many years. The Pacific Flyway Management Plan for the Northwest Oregon - Southwest Washington Canada Goose Agricultural Depredation Control (Pacific Flyway Council 1998) was developed to address agricultural depredation problems caused by winter goose grazing on grass seed, grain, vegetable crop and pasture lands in the Willamette Valley and Lower Columbia River. This plan recommended that the Ridgefield Complex Refuges implement grazing modifications to provide green forage for migrating and wintering Canada geese through grazing, mowing, and haying. The Refuge objective to provide 168 acres in short perennial grass supports this recommendation.

Grazing has occurred on the pastures surrounding Steigerwald Lake since the early 1900's, but a ditch to drain the lake and its surrounding wetlands greatly reduced the value of the lakebed to

waterfowl. When the Refuge was established in 1987, Refuge staff constructed water control levees and structures to reflood the lake and its wetlands, eliminated grazing from the wetlands, and worked with cooperators to use grazing and haying as management tools to provide higher quality habitat on the grass pastures surrounding the lake for the wintering Canada geese. Canada goose utilization of Steigerwald Lake consists predominantly of western Canada geese and cackling Canada geese, with an average population of 2000 birds. Western Canada geese are found in a variety of habitats along the Columbia River, while cacklers prefer large open fields and are generally the cause of many of the depredation complaints in the lower Columbia River region. There are no substantial alternate foraging sites for cacklers within the Columbia River floodplain between Steigerwald Lake and Portland except for adjacent agricultural lands. The Pacific Flyway Council, in its management plan for the cackling Canada Goose (Pacific Flyway Council 1999), recommended that special protection continue by designation and active management of state and federal refuges and management areas, encouraging practices such as marsh restoration and management, prescribed burning, grazing and cropping.

The success of the grazing and haying programs on Refuge lands would be based on the continued use of the fields during the winter by Canada geese. In order to measure the achievement of this objective, wintering Canada goose surveys would continue to be conducted by Refuge staff.

Additional management strategies to be accomplished by Refuge staff including mowing, periodic prescription burning, and herbicide spraying are described in the CCP/EA. These would be used in conjunction with the seasonal grazing and haying management activities in order to meet the habitat objective for Steigerwald Lake Refuge. These uses are not refuge management economic activities and are not included in this Compatibility Determination.

Cattle grazing and haying are considered refuge management economic activities. These activities have been and are proposed to continue to be conducted under a cooperative land management agreement (CLMA), which would be established and between the Refuge and the livestock operator (cooperator). The CLMA would establish an in-kind program, which means that both parties receive mutual benefits from the land. In this case, the cooperator would receive grazing and haying privileges, and the Service would receive management actions conducted primarily for the benefit of the migrating and wintering Canada geese at Steigerwald Lake Refuge.

After public announcement of the availability of grazing and haying operations on the Refuge, the cooperator would be selected from a list of persons that indicate a desire to exercise grazing and haying privileges on the Refuge and meet eligibility criteria. The cooperator must demonstrate a willingness to comply with all of the Refuge's guidelines and have access to other grazing land during the prescribed rest periods. The successful cooperator would be selected based on an open bid process for grazing and haying privileges. The CLMA would be issued on a three to five year basis, based on anticipated changes in the needs of the Refuge. The current

CLMA terminates September 30, 2006. At the end of the agreement period, Refuge staff would review the grazing and haying program, and if the cooperator has performed satisfactorily, the agreement may be revised and renewed as needed. This was done at the end of the first 5-year CLMA with the current cooperator, renewing it for another three years. If major changes are required or either party wishes to terminate the CLMA, the CLMA would be sent out to bid. The CLMA incorporates an annual work plan and identifies the recurring and newly identified responsibilities of the Service and the cooperator. Sections of the annual work plan may change from year to year to accommodate special habitat needs such as aerating, fertilizing, or applying designated herbicides. Based on the grazing and haying privileges received by the cooperator under the past CLMA, in-kind benefits due to the government did not usually allow for inclusion of additional work, but it does provide for that opportunity should the Refuge Manager and cooperator agree to it.

The special use permit would allow cattle to be on the Refuge between approximately May 1 and September 30 of each year. Cattle would be allowed to begin grazing in May after the wintering Canada geese have migrated north, and the grass has grown to a height of 4 to 6 inches. Cattle would be rotated between two subunits (West and East) on the North Stevenson Unit during May and July. Approximately 40 animal unit (AU, or cow-calf pairs) are grazed each year.

After the South Straub Unit has been hayed (described below) and grass has regrown, the cattle would be moved there to reduce the amount of additional regrowth that would recur, providing short grass forage for migrating Canada geese. Cattle are removed from the fields by September 30, prior to the arrival of the migrating Canada geese. All cattle movements are currently made from the adjacent landowner's property without the use of any vehicles for transportation.

A Refuge-owned well, underground pipelines, and stock tanks provides water to the cattle. The three grazing units are enclosed with barbed wire fences, which have been in place since before the Refuge was established in 1987. The cooperator would be allowed to use a vehicle to access the facilities used during the cattle operations.

The only building on Refuge lands is the pumphouse located in the northeast corner of the Stevenson Unit. The cooperator may store supplies, tools, etc., in that location on a temporary basis, but it is too small to accommodate long term storage. Necessary storage of tractors and implements during the field season would be coordinated with the Refuge Manager and included in the annual work plan. They would not be permitted on the Refuge outside of the period of use designated in the CLMA and annual work plan.

Haying is used as an alternative economic activity to grazing, and it also provides for another means of reducing the annual growth of pasture grass before the arrival of migrating geese. Haying operations would be conducted from mid-June to mid-July in two units, South Straub and South Stevenson, which total 105 acres.

In lieu of payment for the grazing and haying values, the cooperator performs Refuge maintenance activities at hourly rates proposed during the bidding process. Maintenance activities include such items mowing weeds prior to seed establishment, mowing grazed or hayed fields in September to ensure an even height, 4" to 6" stand of grass prior to the arrival of Canada geese, constructing new fences, and repairing the Refuge-owned water system. This water system is an integral part of the system used to provide water to cattle on land adjacent to the Refuge owned by the current cooperator, who sold 90 acres of Steigerwald Lake to the Service to provide for important completion of the Steigerwald Lake bed acquisition. Because the Refuge required a transition from cattle watering along the lakeshore, which required no maintenance, to a watering system, with regular maintenance, the Service agreed as part of that sale that a stock watering site would be available for the cooperator as long as livestock were grazed on the cooperator's land. Since the Service does not have the maintenance personnel to maintain that system on a timely basis in case of malfunction, the cooperator is allowed to receive benefits for conducting maintenance on the watering system on Refuge lands.

The cooperator may also apply herbicides or biocontrols to reduce weeds in the pastures, provided that application is coordinated and approved in advance with the Refuge Manager. This is not expected to occur on a regular basis, but may be required to maintain pasture quality. All applications would follow Service and Refuge guidelines and regulations.

Availability of Resources:

An estimated \$4,000 of Refuge staff time is needed annually for planning, oversight and coordination of this use. Before each field season, the Refuge Manager would need to review the annual work plan, discuss it with Refuge Complex headquarters staff, and make necessary changes to the plan. He would then discuss any changes with the cooperator prior to initiation of grazing. Periodically, assistance may be required of Refuge maintenance staff to maintain the watering and electric fence systems. Refuge staff would monitor the grazing operations and haying operations, and periodically evaluate habitat conditions before, during and after the grazing season. At the end of the season, Refuge staff reviews the worksheets provided by the cooperator to determine actual animal unit months grazed, hay removed from the Refuge, and work provided by the cooperator, followed by a report to the cooperator outlining the details of his (her) performance in comparison to the work plan. The overall cost to the Refuge in terms of labor is considered to be low, especially taking into the consideration the benefits provided to the Refuge in meeting the previously described goal and objectives. Current Refuge financial and staff resources are adequate to administer this use.

Anticipated Impacts of the Use:

The primary benefit for the use of livestock grazing and haying would be to enhance the Refuges's ability to provide short, nutritious grass forage from October to May for migrating and wintering Canada geese in managed fields of Steigerwald Lake Refuge. Anticipated impacts of the proposed livestock grazing and haying programs on the Service's ability to achieve Refuge purposes and the Refuge System are explained in the Environmental Consequences sections of

the CCP/EA. The following is a summary of the anticipated impacts.

Excessive nutrient input from cattle via deposition of excretia and vegetation trampling can occur in areas where cattle concentrate, especially when large numbers repeatedly use a localized area. This can be extremely detrimental when such concentrations occur under trees where they provide shade and along shorelines when cattle are allowed access for watering. In the case of grazing at Steigerwald Lake Refuge, however, only 40 cow-calf pair are grazed in one unit at a time. There are no trees in the units where cattle can congregate and have a negative impact. Since the Service acquired the Refuge and began management of the grazing units, new fences have been constructed to eliminate previous use of wetland shorelines, and water is now provided from a well and underground pipeline to a watering trough in each unit. Although some concentration with associated grass destruction and soil compaction does occur where the cattle access water, when the cattle have eaten the forage in the unit to the point where they require rotation to another unit, the small areas around the watering troughs then get a rest and a chance to recover. At the same time, the deposition of excretia from the low number of cattle using the unit provides some natural fertilizer, which would reduce the amount of chemical fertilizer needed to keep the pastures in optimum condition to provide winter Canada goose foraging areas. In addition, the low number of cattle used in the units, and the fact that they are restricted to the drier months of the year (May through September), reduces the negative vegetative trampling impacts the cattle would have if they were allowed to graze during the rainy period of the year.

The grazing and haying cooperative programs would reduce the presence of standing and accumulation of dead plant material, providing optimum foraging habitat for Canada geese. Canada geese do not use fields with standing material, alive or dead, as they require areas where they have a clear view of the area around them, giving them security from predation.

Although fencing could be a problem if there are extensive fences, over 10,000 linear feet of fences have been removed since the Refuge was acquired, leaving primarily those fences needed to implement the grazing program and exterior boundary fences which, when combined with boundary signing, aid in the prevention of trespass of the public into closed areas. The fences remaining no doubt may impede the movement of some wildlife, especially when overgrown with Himalayan blackberry, but they are also frequently used as perch sites for raptors such as harriers and red-tailed hawks and as singing post for songbirds such as western meadowlarks and common yellowthroats.

The importation of cattle and equipment from out of the local area could introduce non-native noxious weeds not found in the local area. To reduce the possibility of this from occurring, equipment brought onto the Refuge from outside the local area would be required to be cleaned prior to bringing on the Refuge. The introduction of non-local cattle would require that Service staff and the cooperator spend additional time monitoring the fields for new weed species. If found, treatment by hand pulling, mowing, or herbicides would be used as circumstances dictate.

These monitoring and control activities would be beneficial to both parties, as neither benefits from the presence of weed species. In addition, by allowing the cooperator to obtain hay from the Refuge to feed their cattle, it would reduce the possibility of non-local hay with non-local weeds of being recycled through the cattle, depositing weed seeds in excretia during the early portion of the time the cattle are on the Refuge.

The pastures typically would be kept in a short grass condition most of the year. During the winter, grass is kept short by a combination of relative dormancy and continual grazing by Canada geese. After the geese leave, the grass would grow until the cattle move onto the units. At this time, grass can grow to a height of 1' to 2' before providing enough forage to move cattle into the unit. The cattle would selectively graze the tender, nutritious blades of grass, leaving the stems and seedheads. When grass has been grazed to 3-4", they would be moved onto the next unit. Once the cattle have left a unit, the dry period of the summer would usually prevent return of the cattle to unit. The fields would be mowed during late August or September in preparation for the fall arrival of Canada geese. As in the case of weed control of newly introduced weeds, areas of weeds which have expanded to the extent that they need control may be done by the Service or by the cooperator. In the case of herbicide application, certification by the State of Washington would be required, as would following of label instructions, and Service and Refuge guidelines.

A variety of wildlife have been observed using the grasslands on the Refuge, both in pastures and non-managed fields. Raptors such as harriers, red-tailed hawks and short-eared owls have been seen foraging for small mammals such as rabbits, mice, shrews and voles. Harriers and short-eared owls are assumed to be field nesters in the non-managed fields. Because of the lack of previous season dead vegetation in the pastures, most of the nesting by song birds probably occurs in the non-managed fields. Short grass species such as savannah sparrow, yellowthroat, and western meadowlark would, however, use the fields for feeding opportunities. Small mammal surveys have not been conducted on the Refuge, but typical grassland species found in the area include deer mice, Townsend's voles, and vagrant shrews. Species such as the eastern cottontail, coyote, raccoon and striped skunk might be found using the fields along the edges near shrubs or non-managed fields of grass..

Haying in the few pastures used by raptors, songbirds, and small mammals could result in the destruction of some bird nests and some small mammals. The best alternative would be to delay haying until July 15 as most of the nesting birds will have fledged their young by that time. Doug Fenwick (2004), Clark County Natural Resources Conservation Service, however, indicated that on the west side of the Cascades, hay is palatable and nutritious only if cut before it sets a firm Seedheads. Because of the rapid spring growing season in this are, most local hay growers cut their hay in May and June when it is tender and green. Hay not cut until July 15 would not make quality hay, as it would have matured and set seeds. In addition, it would make poor quality straw because of the presence of weed seeds and poor stem support. To compromise between trying to provide for some nesting protection and still allow the cooperator

to obtain quality hay, haying would be allowed in South Straub field to begin approximately June 15, depending upon the condition of the hay, followed by haying the South Stevenson field. In the past, each field has taken approximately two weeks to hay. This would provide a field of good quality and a field of fair quality hay.

In these two fields, most of the small mammals such as moles, shrews, voles, and mice live underground or in small tunnels through the grass, and are expected to be only minimally disturbed. Raptors and larger mammals such as rabbits would be able to move to other areas with better cover outside the pasture if disturbed by the grazing and haying activities. Haying operations may result in some mortality to nesting birds and smaller mammals (including those with young). Because as stated above, however, the pastures do not develop the residual cover which would provide optimum quality nesting cover for birds, mortality is expected to be minimal.

In addition to the 168 acres of pastures proposed in the CCP/EA to be managed through haying and grazing to provide short grass as forage for wintering Canada geese, the Service has proposed an additional 105 acres of unmanaged “old fields” which provide suitable habitat for nesting birds and other wildlife that require undisturbed or minimally disturbed grassland habitats.

There are probably few negative effects on amphibians or fish, as the cattle units are fenced to exclude access to water bodies, and there is a natural grass buffer of at least 100 feet surrounding all of the wetlands.

The Service’s preferred draft alternative (Alternative B, Chapter 3) for public uses in the CCP/EA proposes a variety of activities on the Refuge, which include environmental education, interpretation, and public use of the Columbia River Dike trail. None of the visitors using the proposed public use activities would have the opportunity to come in direct with the grazing and haying operations, as the grazing and haying would occur on areas of the Refuge closed to the public. Users of the Columbia River Dike Trail would not be able to observe grazing activities of the Stevenson Unit, as the trees and shrubs along the Gibbons Creek channel obscure the view during the summer, and the proposed activities would not be conducted during winter months when the trees are bare of leaves. The grazing and haying activities would be visible when conducted in the South Straub Unit, but the cattle watering source (the most likely cause for cattle concentration and negative vegetative impacts) is located at least 1000 feet away from the dike and would not be very visible.

The Steigerwald Lake Gateway Center as described in a previous EA proposes an interpretation center and interpretive trail. Visitors using the Gateway Center and the portion of the interpretive trail open to the public during grazing season would be able to view cattle, but the cattle watering source for the cattle using the Stevenson Unit is approximately one-quarter mile from the trail, and one-quarter mile from the proposed Gateway Center.

The Service would be emphasizing interpretation of the Refuge natural resources and management activities, which would include describing the use of grazing and haying to benefit the pastures used by Canada geese for winter foraging. This message can be described both at the Gateway Center and in an interpretive panel along the trail.

Public Review and Comment:

Public review and comment are required before issuing a final compatibility determination. Public review and comment of compatibility determinations will occur concurrent with the 30-day public comment period for the draft CCP/EA. Comments received will be addressed in the final CCP/EA and compatibility determinations.

The public will be notified of the availability of the draft CCP/EA and compatibility determinations through the following sources:

- Federal Register Notice of Availability of Draft CCP/EA
- Refuge CCP Planning Update Number 3 sent to the CCP mailing list
- News releases sent to Vancouver, Camas-Washougal, and Skamania County newspapers

Printed copies of the CCP/EA, with compatibility determinations, will be available for public review on site at the Ridgefield and Steigerwald Lake Refuge offices, at libraries in the towns of Stevenson and Washougal, Washington, and at the Fort Vancouver Regional Library in Vancouver, Washington.

The public can request an electronic copy or paper copy of this compatibility determination by contacting the Ridgefield and Columbia Gorge Refuge offices. Compatibility determinations will also be available online as an appendix to the CCP/EA. The Service's Region 1 Planning Division website address will be identified in the Planning Update and news releases.

Determination

☐ Use is Not Compatible

☒ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility:

- Restricted-use chemicals are not permitted on the Refuge. Application of any herbicides or biocontrols would require the cooperator to obtain advance approval by the Refuge Manager.
- Cooperator shall comply with all county and state laws applicable to operations conducted under this agreement as well as all federal laws and regulations governing national wildlife refuges and the area described in this agreement. Upon request, the Refuge Manager can provide copies of chapters on haying, grazing, and weed management in the Refuge Manual and provide information to access Refuge regulations on the Internet.

- Possession/use of firearms or other weapons is prohibited on Refuge lands except as authorized by the Refuge Manager.
- Cooperator would immediately notify the Refuge Manager should any trespass or migratory bird hunting violations be observed at Steigerwald Lake Refuge.
- Cooperator would provide the Refuge Manager with the names of all persons to be working in the field to implement the grazing and haying programs. If additional staff are working with those individuals previously identified, the names of additional staff are not required to be provided. Only those persons directly associated with pasture management operations shall be allowed access to the Refuge.
- Work would not be initiated by the cooperator until approval is provided by the Refuge Manager.
- Season of use shall be May 1 through September 30, unless authorized by the Refuge Manager. Actual cattle turn-in time and initiation of haying would be coordinated with the Refuge Manager.
- All farming equipment is to be removed from the Refuge for the period October 16 through April 30, unless specifically authorized by the Refuge Manager.
- All trash associated with cooperator's operations would be removed from the Refuge on a daily basis.
- Approval by the Refuge Manager is required prior to storing equipment on the Refuge. The cooperator may store tools, supplies, etc., in the pumphouse on a temporary basis during the field season, but must be removed by October 15.
- Equipment from outside the local area must arrive on the Refuge clean and free of plant and seeds to minimize the introduction of non-local weeds.

Justification:

The haying and grazing cooperative land management program contributes to achieving a Refuge purpose and goal as identified in the CCP/EA and the National Wildlife Refuge System mission by providing valuable foraging areas for wintering and migrating Canada geese. It also contributes by economically providing weed control and other habitat maintenance functions which are not feasible for limited Refuge staff to accomplish. Minor negative impacts to wildlife (primarily nesting grassland birds) are offset by providing unmanaged fields on the Refuge which provide alternative habitat for sanctuary from grazing and haying activities.. This program contributes to other Refuge management activities by providing a cooperator to conduct habitat and maintenance work, and it does not detract from any existing or proposed wildlife-dependent, priority public uses.

Mandatory Re-Evaluation Date

_____ Mandatory 15-year Re-Evaluation Date (for priority public uses)

___X___ Mandatory 10-year Re-Evaluation Date (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

___ Categorical Exclusion without Environmental Action Statement

___ Categorical Exclusion and Environmental Action Statement

___ Environmental Assessment and Finding of No Significant Impact

___ Environmental Impact Statement and Record of Decision

Refuge Determination:

Prepared by:

(Signature)

(Date)

Refuge Manager/
Project Leader

Approval:

(Signature)

(Date)

Concurrence:

Refuge Supervisor:

(Signature)

(Date)

Regional Chief,
National Wildlife
Refuge System:

(Signature)

(Date)

Literature Cited

Fenwick, D. 2004. "Suggested management of grazing and haying resources in Clark County". Personal telephone call, U.S. Department of Agricultural Natural Resources Service, Brush Prairie, Washington. 28 May.

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Compatibility Determination

Use: Transportation of Sewage Treatment Plant Biosolids over Refuge Dike

Refuge Name: Steigerwald Lake National Wildlife Refuge (Refuge), Washougal, Washington

Description of Use(s):

The City of Washougal (City) sewage treatment plant is located adjacent to the Kerr Tract, located in the northwest corner of Steigerwald Lake Refuge. Staff at the treatment plant have requested a special use permit be issued to allow them to transport their tertiary treated biosolids by truck over a short Refuge-owned dike (approximately 400 linear feet) from their plant to a 20-acre site on pasture lands owned by the Port of Camas/Washougal, where the Port allows them to apply the Biosolids as agricultural fertilizer. This action is described in the Columbia Gorge Refuge Comprehensive Conservation Plan/Environmental Assessment under the section titled “Features Common to all Alternatives, Transport of Biosolids Across Dike at Steigerwald Lake Refuge”.

This action has been requested annually since 1993, with application actually accomplished in an average of once every 2 to 3 years. This action has been reviewed with the Biology and Contaminants Divisions, Portland Regional Office, U.S. Fish and Wildlife Service (Service) on several occasions. A chemical analysis report of the biosolids to be applied has been reviewed by biological staff of the Service Contaminants Division prior to issuing a special use permit. The most recent Service Contaminants review occurred during 2003. Although consultation between Refuge and Service Contaminants Division staff has occurred previously, this is the first compatibility determination to have been developed for this activity.

The application of the biosolids would not be made on Refuge lands, but on lands which are part of the Port of Camas/Washougal Industrial Park adjacent to the Refuge. The application site is a gently rolling ridge of pasture grass south of a reed canarygrass-dominated portion of Steigerwald Lake, located immediately south of the sewage treatment plant. The top of the ridge is located approximately 50 feet south of the Refuge boundary, which is separated by a barbed wire fence delineating canarygrass to the north and rank pasture grass and canarygrass to the south. Application would be made on the top and south side of the ridge.

The application site would be mowed and disced prior to application to reduce the possibility for unintended movement of material toward the Refuge and other nontarget sites. Environmental Protection Agency (EPA) guidelines for biosolids application (Environmental Protection Agency 1994) designate that biosolids be incorporated into the soil within 6 hours after placement on the soil surface, which would be accomplished.. The City of Washougal Site Specific Land Application Plan (City of Washougal Undated) for this site specifies that biosolids application on this site be limited to the dry season and that application is to be suspended during periods of sufficient rainfall that surface flows could result. The biosolids transfer would, therefore, occur

during the dry, non-rainy season of mid-July to mid-October, and typically takes about a month of daily biosolids transfer. The timing of application would also be included as a stipulation of this compatibility determination and as a condition of the special use permit.

A sludge transport truck driven by one of the City employees would be used to haul the solution, which is the consistency of mud, and apply it to the ground with the use of a splash plate from the back of the truck. The driver would check after each application for runoff. There would be approximately 8 to 10 trips per day across the dike, about one per hour.

Availability of Resources:

An estimated \$1,000 of Refuge staff time is needed during those years that a special use permit (permit) would be issued. This would include time to coordinate review by the Service Contaminant staff of the chemical composition analysis report for the biosolids to be transported, coordinate collection of additional information to issue the permit, develop the permit, and periodically (every 5 days) monitor the Refuge lands adjacent the biosolid application location to ensure no runoff is occurring onto Refuge lands and that the applicator is complying with all conditions of the special use permit. Funds are available for Refuge staff to perform the above activities, as it is a small portion of the total budget.

If a biosolids spill or runoff occurred, the application would be stopped, Refuge staff and WDOE would be notified, and application procedures would be modified to prevent it from occurring again. The City would be responsible for expenses required to clean up the contaminated area to the satisfaction of the Refuge and WDOE.

Anticipated Impacts of the Use(s):

The application of biosolids from the City of Washougal sewage treatment plant to the Port of Camas/Washougal-owned lands is coordinated and authorized by the Washington Department of Ecology (WDOE). The City submits an annual application to WDOE for coverage under the Statewide general permit for biosolids management. An analysis of the chemicals in the biosolids is provided to the WDOE along with the application. The analysis report has also been reviewed during several years by staff of the Biology and Contaminants Divisions of the Service before a permit is issued by the Service for the proposed action. During the 2003 review, the Contaminants Division (Steffick 2003) noticed that arsenic, copper, mercury and zinc were somewhat elevated, although all the levels except arsenic were well below the WDOE standards for contaminants in land-applied sludge. The Service Contaminants and WDOE staff did not know the reason for the elevated arsenic levels. After consultation with WDOE staff, however, the Service Contaminants staff gave approval to allow transport of the material on the Refuge dike. Refuge staff would continue to consult with the Service Contaminants Division each year biosolids transport and application is proposed.

In addition to its coordination with WDOE, the City was recognized by the Washington Department of Ecology in 2002 as one of 31 cities that passed perfect compliance with wastewater discharge environmental tests, including no spills.

The dike on which the trucks would transport the biosolids material was constructed by the in 1992 to provide for the shortest route for a sanitary sewer line from the sewage treatment plant to the Columbia River to provide for tertiary effluent discharge. When the dike was constructed, an all-weather gravel road was constructed along its top. The transportation of the biosolids by trucks on the Refuge dike, therefore, would not impact any dike vegetation. By limiting truck speeds to 5 mph, the risk of a truck accidentally leaving the diketop, overturning and spilling biosolids material onto the Refuge wetland is minimized. Although there may some disturbance to wildlife using Refuge lands adjacent to the dike when trucks are transporting biosolids, it is expected that the degree of disturbance would be minor (temporary short distance flushing or movement of wildlife from the immediate vicinity of the dike) and that it would be of a short-term duration.

Because of the required chemical analysis of the biosolids to be applied, monitoring, and lack of planned application on Refuge lands, it is not anticipated that there would be any negative effects on wildlife resources. If a spill during transport or runoff occurs and it reaches Refuge lands, Refuge staff would coordinate with sewage treatment plant, WDOE, and Service contaminant personnel to determine appropriate cleanup actions which might be necessary to be taken. The City of Washougal would be responsible for any cleanup actions required.

Public use (hikers, bikers, joggers, dog-walkers, and horseback riders) have used the Columbia River dike for many years, and this activity is described in Alternative B of the CCP/EA. Current use one-time use ranges from approximately 0 to 30, with an average of 20 (Dugger 2003). This trail is located approximately 1,000 feet south of the southern edge of the application area. Application of the biosolids material is made with the use of a splash plate located on the back of the truck. This spreads the material fairly thinly across the application area, and the hot, dry conditions of July and August result in most of it drying out in a short period of time. In addition, the material is disked into the ground at least every 6 hours. Thus, there should no objectionable odors to the public using the dike.

Public Review and Comment:

Public review and comment are required before issuing a final compatibility determination. Public review and comment of compatibility determinations would occur concurrent with the 30-day public comment period for the draft CCP/EA. Comments received will be addressed in the final CCP/EA and compatibility determinations.

The public will be notified of the availability of the draft CCP/EA and compatibility determinations through the following sources:

- Federal Register Notice of Availability of Draft CCP/EA

- Refuge CCP Planning Update Number 3 sent to the CCP mailing list
- News releases sent to Vancouver, Camas-Washougal, and Skamania County newspapers

Printed copies of the CCP/EA, with compatibility determinations, will be available for public review on site at the Ridgefield and Steigerwald Lake Refuge offices, at libraries in the towns of Stevenson and Washougal, Washington, and at the Fort Vancouver Regional Library in Vancouver, Washington.

The public can request an electronic copy or paper copy of this compatibility determination by contacting the Ridgefield and Columbia Gorge Refuge offices. Compatibility determinations will also be available online as an appendix to the CCP/EA. The Service's Region 1 Planning Division website address will be identified in the Planning Update and news releases.

Determination :

_____ Use is Not Compatible

____X____ Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility:

- Notify the Refuge Manager (360) 835-8767 during the week prior to the beginning of the project and when the project is complete, and immediately in the event of any complications or accidents resulting in a product spill during transport or runoff during application. In case Refuge Manager is not available, notify Ridgefield Complex Project Leader or Deputy Project Leader at (360) 887-4106.
- As stated in the Washougal Site Specific Land Application Plan - Site 1, there is to be a 50-foot buffer between the Refuge boundary fence and the northernmost application of biosolids.
- Biosolids material would be applied only during dry season of the year (July through October) and suspended during periods of rainfall sufficient that surface flows could result.
- Monitoring is to be continued regularly during each application to ensure no biosolids flow south toward Refuge lands. If runoff occurs into Refuge wetlands or Gibbons Creek, application would be stopped immediately and Refuge staff would be notified as specified in Number 1.
- In the event of runoff or a spill onto Refuge lands, permittee would be responsible for all cleanup satisfactory to WDOE and USFWS requirements.
- Trucks would be restricted to a speed of 5 miles per hour on the dike road. The dike road would be maintained in original or better condition by the permittee.

Justification:

Along with other agencies, Refuge staff worked with City of Washougal staff during planning and design phases of the facilities necessary for diversion of Gibbons Creek from Steigerwald Lake to the Columbia River. After it was determined that Gibbons Creek would be diverted from Steigerwald Lake, the Washington Department of Ecology directed the City to eliminate sewage treatment plant effluent from being discharged into the lower end of Steigerwald Lake. The City worked with Refuge staff to design and construct a dike which would carry these effluents in a buried pipeline below Refuge wetlands. This dike, with three flashboard riser water control structures, allows Refuge staff the capability to conduct water level management. During these planning operations, Refuge and City of Washougal staff worked cooperatively, with the City accommodating all environmental concerns expressed by the Refuge staff.

The transportation of Biosolid across the short Refuge dike and subsequent application on Port of Camas/Washougal pasture lands should not negatively impact Refuge habitat, wildlife resources, or public uses. In addition, stipulations outlined for inclusion in the special use permit specify a requirement for regular and frequent monitoring, and for cleanup by the City should a spill or runoff occur.

This activity would have minimal negative impact to Refuge budgetary and habitat resources and would help maintain good working relationships with the City of Washougal staff.

It is determined that this activity would not materially interfere with or detract from the purposes for which the Gorge Refuges were established.

Mandatory Re-Evaluation Date:

_____ Mandatory 15-year Re-Evaluation Date (for priority public uses)

____X____ Mandatory 10-year Re-Evaluation Date (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision:

_____ Categorical Exclusion without Environmental Action Statement

_____ Categorical Exclusion and Environmental Action Statement

_____ Environmental Assessment and Finding of No Significant Impact

_____ Environmental Impact Statement and Record of Decision

Refuge Determination:

Prepared by:	_____	_____
	(Signature)	(Date)
Refuge Manager/ Project Leader		
Approval:	_____	_____
	(Signature)	(Date)

Concurrence:

Refuge Supervisor:	_____	_____
	(Signature)	(Date)
Regional Chief, National Wildlife		
Refuge System:	_____	_____
	(Signature)	(Date)

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